SAARC Second Conference on
tuberculosis, HIV/AIDS & Respiratory Diseases
15 - 18 December 2008, Kathmandu, Nepal

Abstract Book

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December 8, 2008

Message

I am glad to know that SAARC TB and HIV/AIDS Centre (STAC) is organizing "SAARC Second Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases" from 15 to 18 December 2008 in Kathmandu, Nepal.

SAARC has done many exemplary works for the upliftment of the life of the people of its Member States. The SAARC Member States have profoundly realized the seriousness and urgency of controlling TB and HIV/AIDS. This conference highlights the commitment of SAARC for controlling TB, HIV/AIDS and Respiratory Diseases.

This Conference can be utilized as a grand occasion to discuss on burning issues, research on these diseases, challenges, recent progress and potential plan towards TB, HIV/ AIDS and Respiratory Diseases. Expert from SAARC Member States and abroad can exchange their experiences related to these diseases. This event is an opportunity to renew collective commitments for the common goals by emphasizing the need for concerted actions towards the control of Tuberculosis, prevention of HIV/AIDS and management for the Respiratory Diseases.

I am happy to know that on this occasion "A Book of Abstracts" of scientific papers is being published. I hope this book will be very useful to disseminate scientific findings and issues related to these diseases.

I would like to extend my best wishes for all success of the Conference.

[Signature]

Pushpa Kamal Dahal 'Prachanda'
Message

It gives me a great pleasure that SAARC Tuberculosis and HIV/AIDS is organizing “SAARC Second Conference on Tuberculosis, HIV/AIDS & Respiratory Diseases” from 15th to 18th December 2008 in Kathmandu, Nepal. The theme of the Conference “Working together to fight against TB, HIV/AIDS & Respiratory Diseases” is very significant and relevant because working together for a common goal is a key to success. This Conference can play a vital role to establish a good networking for working together in controlling TB, HIV/AIDS and Respiratory Diseases.

As there is no boundary for diseases, Tuberculosis can be spread anywhere, so it was said “TB anywhere is TB everywhere”. Tuberculosis & HIV/AIDS are major public health problems and HIV/AIDS has started affecting Tuberculosis control. Respiratory diseases are the leading causes of significant morbidity. There is a need for tackling these diseases comprehensively at National, Regional and Global level.

I would like to use this opportunity to convey my good wishes through this message and want to congratulate SAARC TB and HIV/AIDS Centre for organizing this conference and bringing up important issues relating to TB, HIV/AIDS and Respiratory Diseases for deliberations.

I wish the conference all success.

December 2008

Girirajmani Pokharel
Minister
Message

I am very glad to know that SAARC Tuberculosis and HIV/AIDS Centre (STAC) Kathmandu is organizing “SAARC Second Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases” from 15th to 18th December 2008 in Kathmandu, Nepal. I am confident that this conference will bring all stakeholders on a common platform for sharing experiences and reiterate the commitments for working together to tackle these dreaded diseases.

The theme of the Conference “Working together to fight against TB, HIV/AIDS & Respiratory Diseases” is much relevant. Deliberations of this theme would go a long way in disseminating latest know-how and advancement in the fields of control of Tuberculosis, prevention of HIV/AIDS as well as Respiratory Diseases.

I would like to extend my best wishes through this message for success of the Conference and I congratulate the SAARC TB and HIV/AIDS Centre for organizing the conference on these important topics.

Upendra Yadav
The HIV epidemic has the potential to worsen the TB situation as has happened in certain African countries. The dual epidemics are also of growing concern in Asia, where two-thirds of the TB-infected people live. In developing economies like Pakistan, the potential financial burden imposed by TB cases attributable to HIV infection could overwhelm the healthcare budget and support services. The HIV epidemic has posed major challenges to TB control efforts. It is necessary that both the TB and HIV control programmes work together to contain the spread of both these infections. The purpose of the coordination will be to ensure optimal synergy between the two programmes for the prevention and control of both the diseases. Unfortunately, too often TB and HIV programmes are not working together. Many times staffing, training and research endeavors approach HIV and TB as two wholly independent problems. This vertical approach, amplified by disease-specific funding streams, has served as a barrier to collaboration and integration to address HIV-TB co-infection that occurs in a single patient and that threatens public health as a co-epidemic. Various models of integration and collaboration between HIV and TB programme activities have been adopted in various countries of the region. More models and greater dissemination of models are needed to demonstrate ways in which HIV and TB services can positively interact. Operational research is urgently needed to assess different approaches to the care of HIV-TB co-infected patients.

I, on behalf of the Government of Pakistan, take this opportunity to commend the efforts of SAARC Tuberculosis & HIV/AIDS Centre (STAC) for prevention and control of TB and HIV/AIDS in the Region by coordinating the efforts of the National Tuberculosis Control Programmes (NTPs) and National AIDS Control Programmes (NACPs) of Member States. I believe that by working together we can put an end to this havoc. I assure Pakistan stands together with all the SAARC nations in the fight to control HIV/AIDS and TB in our region.
Mr. Nimal Siripala De Silva  
Honourable Minister of Healthcare & Nutrition  
Sri Lanka

Message

It gives me great pleasure to be associated with the Second SAARC Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases launched by the SAARC Tuberculosis and HIV/AIDS Centre (STAC), to strengthen the activities on controlling tuberculosis, HIV/AIDS and Respiratory Diseases in the region. As the Minister of Health / Sri Lanka and the Chairman of the Executive Board of the World Health Organization, I am indeed grateful to the STAC for making an effort to take such a campaign forward.

Tuberculosis is a disease that respects no age, ethnicity, geographic or socio-economic barriers or boundaries and has become the commonest infectious disease in the world and also the commonest cause of death among adults, due to infectious diseases. The disease is associated with untold suffering to the patient as well as to the family, as this leads to unemployment and thereby to poverty and deprivation. The alarming situation has lead the WHO to declare tuberculosis as a global emergency. It was agreed that the tuberculosis epidemic must be controlled. As Sri Lankans, we can satisfy with the achievements that we have accomplished during past years and being on the top of the list in control of TB, among South Asian countries.

We have a strategic plan for controlling and combating this disease and it has been implemented covering the whole country. We were able to achieve the global targets of 70% case detection and 85% treatment success rate by the year 2005. By the end of year 2006 the treatment success rate was 87% and the default rate has dropped to 6.7% which was 14.8% in year 2000.

The first sero-positive case of HIV infection in a native Sri Lankan was detected in 1987, and the early cases attracted much hostile publicity from the print media, overt discrimination from the general public and even from health professionals. As a result of the multisectoral and broad based awareness programs launched by the Ministry of Health, stigma and discrimination have been markedly reduced and the print and electronic media approach has changed from event based to message based publications. This has been made possible with the high levels of political will extended by the government.

Sri Lanka remains one of few countries in the region with a low level HIV epidemic. As at the end of 2007, the estimated number of people living with HIV was 3500-4000, and the number of seropositive cases reported to the National STD/AIDS Control Programme was only 996. Since the adult HIV prevalence is less than 0.1%, Sri Lanka is categorized as a country with a low HIV/AIDS prevalence. The National HIV/AIDS Control Programme has developed a National Strategic Plan (2007-2011) to face the future challenges and exigencies.

Bronchial asthma is the commonest respiratory disease that we encounter today and we are in the process of expanding the main mode of treatment method, the steroid inhalers resulting in adding more productive life to the patient. Our steroid inhaler coverage rate is at a higher level compared to other countries in the region. Lung cancers and Chronic Obstructive Pulmonary Disease (COPD) are the two other respiratory diseases related to smoking that could be prevented. We have taken measures through programs implemented at national level to prevent smoking.

The primary responsibility of TB, HIV/AIDS and Respiratory Diseases control activities rests with the government health authorities. Being diseases with disastrous outcome, the control activities must be given high priority by all health care providers and must be attended at all levels of health care services available. Community organizations as well as groups of health professionals must be mobilized to participate in activities to control these diseases. Their activities should always be recognized by the government health authorities.

This conference on Tuberculosis, HIV/AIDS and Respiratory Diseases will create an environment to share the knowledge and experiences of experts with others. I wish this programme and the STAC a success in their endeavors in improving the health in our region.
Honourable Rohitha Bogollagama, M. P.
Minister of Foreign Affairs
Sri Lanka

Message

Second SAARC Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases
Kathmandu, 15-18 December 2008

Sri Lanka welcomes the initiative of the SAARC TB and HIV/AIDS Centre (STAC) in organizing the Second SAARC Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases.

The theme of the Conference, “Working together to fight against TB, HIV/AIDS and Respiratory Diseases” is important as it is only by working together and building partnerships among different sectors that meaningful action can be taken in facing the challenges posed by the HIV/AIDS epidemic and TB/HIV co-infection as well as other respiratory diseases. “Working together” not only within the region but at all levels, international, national and local is essential to bring the different stakeholders and resources that are essential in taking effective control measures.

This Conference brings together stakeholders including scientific communities from key sectors involved in work related to HIV/AIDS and respiratory disease management, and I am confident that the deliberations of this Conference will benefit the countries of our region.

It is estimated that over five million HIV infected people live within our region. The potential and conditions also exist for HIV/AIDS to spread further and faster within the South Asian region. It is time, therefore that we re-invigorate our capacities in cooperation with each other to endeavour to eliminate this scourge.

In this context, the deliberations at the Second SAARC Conference that focuses on key issues such as dissemination of new research on TB, HIV & Respiratory Diseases; sharing experiences of programme implementation, research and innovations; and generating awareness on the urgency of tackling TB, HIV and TB/HIV co-infection will be of critical importance for our region’s success in controlling HIV/AIDS infection, and meeting the targets set for achieving the Millennium Development Goal of combating HIV/AIDS.

On behalf of the Government of Sri Lanka, I wish this Conference all success.

Rohitha Bogollagama, M. P. Minister of Foreign Affairs
Message

It is indeed with great pleasure that I welcome the convening of the Second SAARC Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases from 15-18 December 2008 in Kathmandu by SAARC TB and HIV/AIDS Centre (STAC). It has been envisaged that this Conference will build upon the success of the First Conference held in December 2004, which led to the development of strategies to expand research in the critical areas of public health dealing with TB, HIV/AIDS, co-infection and other respiratory diseases. The first Conference uncovered a number of challenges faced by the stakeholders in mitigating the threats of respiratory diseases and HIV/AIDS. Also the Conference reached a common resolve to intensify efforts to reach the ‘un-reached population’ and enhance public-private partnerships and collaborations.

At a time when the world is going through a resurgence of Multi-Drug Resistant TB and even Extensively Drug Resistant TB, fuelled by HIV/AIDS co-infection, the Second Conference is timely and crucial in bringing the issue to the forefront internationally. It is estimated that across the world 9.2 million cases of TB co-infection emerge every year and while the SAARC region’s share of disease burden is estimated at 2.6 million, only about 1.9 million incident TB cases are notified. Given such a sombre backdrop, the Conference is expected to bring together a wide range of stakeholders working for the cause and a wealth of resources from and beyond the region. It would be devising a common platform for sharing of expertise, research, innovations, experiences and best practices.

The conference will also help in establishing partnerships between governments, health institutions, academia, scientists, researchers, NGOs, private sector and health professionals to extensively cooperate and collaborate in finding pragmatic solutions and improving delivery and effectiveness of interventions and treatment.

I am confident that the outcome of the Conference will be concrete so as to facilitate more action on the ground to help the people afflicted by these dreaded diseases and to improve primary health care systems. Furthermore, it should enable forging new partnerships and forums, optimize resources and create synergies within the region and beyond to fight the scourge of TB and HIV/AIDS.

Thank you.

Dr. Sheel Kant Sharma
Secretary General

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Dr. Samlee Plianbangchang  
Regional Director  
WHO South-East Asia Region  

Message

I am pleased to learn that the SAARC TB and HIV/AIDS Centre (STAC) is organizing the Second Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases in Kathmandu, Nepal from 15-18 December 2008.

This conference is being organized at an opportune moment since countries are moving ahead in addressing the challenges of multidrug-resistant tuberculosis (MDR-TB) and TB/HIV coinfection. It offers an opportunity to share our collective experiences in countries, both in this SAARC Region and elsewhere of combating TB, MDR-TB and TB/HIV coinfection as well as other lung diseases.

STAC has been working with WHO in an effective and collaborative manner to counteract the impact of HIV on TB, and to introduce other interventions required apart from effective TB case-finding and cure. We hope this conference would enable experts to find more corrective measures to decrease HIV transmission, enhance provision of antiretroviral therapy (ART) and ensure care for people living with HIV infection.

At the same time, many successes have also been achieved in the programme to eliminate TB. An overall case detection rate of 68% and a treatment success rate of over 87% were reported by national TB programmes in the South-East Region of WHO in 2007. Interventions for TB/HIV and MDR-TB have been established and are being scaled up in several member countries of SAARC. Efforts are on in many countries to involve all health-care providers in using the International Standard of TB Care. I believe concerted efforts from both the public and private sector is essential to successfully control TB, TB/HIV coinfection, MDR-TB and other respiratory diseases. Addressing the needs of those with HIV/TB coinfection will require greater attention from both HIV and TB control programmes in jointly implementing HIV and TB prevention, treatment, care and support services.

While considerable international attention is now focused on HIV and TB, we cannot neglect chronic bronchial asthma, pneumonia and other respiratory diseases including lung cancer that also take a toll of the lives of people of SAARC and the WHO South-East Asia Region. Indoor air pollution, overcrowding, rapid urbanization, migration of rural populations to big cities and increase in smoking and other risk behaviours need to be addressed. We must collectively ensure that full implementation of the Tobacco Free Initiative becomes a reality in SAARC countries. For this, we need to develop comprehensive approaches to all respiratory diseases, such as practical approach to lung health (PAL) that is being piloted in a few nations around the world. In SAARC countries Nepal is engaged in promoting this novel approach. I trust that you will have the opportunity to hear more about PAL and to discuss the value of this and other similar integrated approaches to tackle health problems.

We need to establish a holistic approach to revitalize primary health care. We need to develop synergistic relationships with all partners in strengthening health systems capacity. By investing in health systems we will, in the long term, save tangible financial resources and make international and national health goals more feasible to achieve.

We in WHO continue to support countries in several ways through assistance for policy development and planning; capacity building through technical assistance and training; strengthening laboratory networks; ensuring the availability of quality drugs; strengthening surveillance; and assisting in programme implementation and research.

I would urge all of you to take the opportunity that this conference provides to not only focus on the technical aspects of respiratory illnesses but also look at cross-cutting areas that require a multisectoral approach. Only then can we think of achieving the health-related Millennium Development Goals within the target date.

I assure you of unstinting support of the World Health Organization towards all efforts aimed at achieving our common goal of a healthy population.

I wish the conference every success.
Message

We are pleased and proud to host SAARC Second Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases in Kathmandu from 15th to 18th December 2008. This is a continuation of the SAARC First Conference on TB, HIV/AIDS and Respiratory which was held very successfully on 14th to 17th December 2004 in Kathmandu. We are organizing this Second Conference with new spirit and enthusiasm.

I would like to use this special opportunity to extend my sincere gratitude to the Governments of SAARC Member States and SAARC Secretariat for their support for organizing the SAARC Second Conference on TB, HIV/AIDS and Respiratory Diseases in Kathmandu. On this very special occasion A Book of Abstracts of scientific presentations is being published. I hope these abstracts will be very valuable and informative for the experts and health workers involved in control and prevention of these deadly diseases. I also hope that this conference will be a common platform to build a pool of important information and tools to update the know-how on TB, HIV/AIDS and Respiratory Diseases.

Nepal decorated with Mount Everest is the Birth Place of Lord Buddha, a symbol of Peace in the world. You can take this opportunity to see the ancient beautiful city of South Asia and its historical monuments of golden era and rich cultural heritage with typical Nepalese cuisine. I wish all a pleasant stay in Kathmandu.

I, along with my team will try our best to make this conference very pleasant, efficient, effective, interesting, fruitful, friendly and memorable. I hope you will support us to make this event a grand success. We are eagerly waiting and looking forward to welcome you in Kathmandu.

Dr. Kashi Kant Jha
Director, STAC
Chairman
Organizing Committee
Dr. Jai P. Narain  
Director Department of Communicable Diseases  
WHO South-East Asia Region

Message

I am very happy to know that the South Asian Association for Regional Cooperation Tuberculosis and HIV/AIDS Centre is organizing the Second Conference on Tuberculosis, HIV/AIDS and Respiratory Diseases from 15-18 December 2008 in Kathmandu, Nepal.

I congratulate the Centre on its efforts to bring together all the Member States of SAARC to address and resolve issues related to TB, HIV/AIDS and respiratory diseases. To do our job properly, those working in clinical medicine and in public health must understand the social context of health interventions and the economic forces that shape people’s chances for well-being.

Today’s great health challenge is equity: ensuring optimum and continued access to health services by and accelerating health progress among poor and socially excluded groups. This requires intensifying action to address the diseases that most heavily affect poor communities while simultaneously mobilizing knowledge, resources and a level of political commitment that keeps address the social determinants of health within the parameters of policy. This coordinated action is vital if SAARC Member countries are to achieve the health-related Millennium Development Goals (MDGs) within the target date.

Higher TB rates among impoverished communities and marginalized groups have been observed in most SAARC Member States. HIV infection fuels the TB epidemic, because it reduces cell-mediated immunity and is a powerful risk factor for the development of TB. It is well recognized that good quality TB control services have contributed to prevent, and indeed in some SAARC Member countries, to reverse the development of anti-TB drug resistance.

However, there are challenges that exist in our countries. These are developing the technical and managerial skills of health personnel, and ensuring the necessary infrastructure and better management of staffing and finances within the general health systems, which are areas that need particular attention in our countries.

Leadership in the battle against TB, TB-HIV and other respiratory diseases rests with the governments, especially with the National TB and AIDS Programmes within the ministries of health. Besides implementing an effective and sustainable TB control programme, we must also ask critical questions of ourselves such as whether we are doing enough to help mitigate poverty—that is the root cause for sustaining the transmission of communicable diseases and unhealthy lifestyles and environments which increase the vulnerability of populations to noncommunicable respiratory diseases. Therefore, we must work together to fight against TB, HIV/AIDS and respiratory diseases.

I wish all participants at this conference very fruitful deliberation.
Committees for the Conference:

I. Steering Committee

1. **Communication & Reception**
2. **Finance**
3. **Local Arrangement & Accommodation**
4. **Publication**
5. **Registration**
6. **Exhibition & Decoration**
7. **Tour, Travel & Transportation**

II. Advisory Committee Members

1. Mr. Hassan Shifau, Director, Social Affairs Division, SAARC Secretariat
2. Representative of Ministry of Foreign Affairs, SAARC Division, Government of Nepal
3. All Governing Board Members of STAC
4. Director General, Department of Health Services, Nepal
5. All Managers/Chief National TB Control Program from SAARC Countries
6. All Managers/Chief National HIV/AIDS & STD Control Program from SAARC Countries
7. Dr. Nils E. Billo, Executive Director, IUATLD, Paris – France
8. Dr. Ian Smith, WHO, Geneva
9. Dr. Jai P. Narain, Director, CDS, WHO/SEARO, New Delhi
10. Dr. Kan Tun, WHO Representative to Nepal

Sub-Committees:

1. Communication & Reception
2. Finance
3. Local Arrangement & Accommodation
4. Publication
5. Registration
6. Exhibition & Decoration
7. Tour, Travel & Transportation

**Chairman**

Dr. Kashi Kant Jha
Director, STAC

**Members**

- Dr. Pushpa Malla
  Director, NTC
- Dr. V. S. Salhotra
  Deputy Director, STAC
- Dr. Lochana Shrestha
  Epidemiologist, STAC
- Dr. Ajith P. Weerakoon
  Research Officer, STAC
- Mr. D. K. Khadka
  Microbiologist, STAC
- Dr. V. S. Salhotra
  Deputy Director, STAC
- Mr. K. B. Basnet
  Administrative Officer, STAC
- Mr. G. L. Joshi
  Accountant, STAC
- Mr. Nirmal Neupane
  Administrative Officer, NTC
- Dr. Y. K. Jha
  Director, STAC
- Dr. Pushpa Malla
  Director, NTC
- Dr. V. S. Salhotra
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  Administrative Officer, STAC
- Mr. G. L. Joshi
  Accountant, STAC
- Mr. Nirmal Neupane
  Administrative Officer, NTC
11. Representative-UNAIDS (Nepal)
12. Representative of Green Light Committee
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14. Mr. Waseim Zaman, Director, Country Tech. Services Team for South & West Asia, UNFPA
15. Dr. Maria Elena Filo- Borromeo, Country Representative UNAIDS
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18. Ms. Silje Hagerup, LHL, Norway
19. Mr. Norikia Niwa, Resident Representative, JICA, Nepal
20. Dr. Nevel James, Newfield (Leeds) U.K.
21. Mohammed Ali Bhuiyan, APLF Coordinator, South Asia Regional Support Team Asia and the Pacific, United Nations Building Rajadamnern Nok Avenue, Bangkok 10200, Thailand.
22. Representative of Health Canada (CIDA)
23. Dr. N. Ishikawa, Director, Regional Institute of TB, Japan
24. Chairman, Nepal Health Research Council, Kathmandu, Nepal
25. President, Nepal Medical Association, Kathmandu, Nepal
26. President, Nepal Association of TB and Chest Physicians (NATCP), Kathmandu, Nepal
27. Mr. Devendra Bdr. Pradhan, NATA President, Kathmandu
28. Mr. Kishor Pradhan, Country Representative to Nepal, PANOS South Asia, Patan Dhoka, Nepal
29. Mr. Rajib Kafle, President, Nav Kiran Plus, Kathmandu, Nepal

III. Scientific Committee Members

1. Dr. Pushpa Malla, Director, National TB Centre, Kathmandu, Nepal
2. Dr. G. R. Khatri, Global Contracts Director, FIDELIS, IUATLD
3. Dr. Nani Nair, Regional Advisor (TB), WHO/SEARO, New Delhi
5. Dr. Md. Akhtar, Medical Officer, WHO, Nepal
6. Dr. A. K. Khera, Joint Director, NACO, India
7. Dr. V. K. Arora, Vice Chairman (TIA), New Delhi, India
8. Prof. Dr. Knut Feldmann, Sr. Microbiologist, GENETUP
9. Dr. P. Kumar, Director, National TB Institute, Bangalore, India (Ex. Deputy Director STAC)
10. Dr. K. Osuga, Research Institute of TB, JATA, Japan
11. Prof. S. K. Rai, Sr. Microbiologist, Nepal Medical College, Nepal
12. Dr. Yassir, Sr. Medical Registrar, Indira Gandhi Memorial Hospital, Male, Maldives
13. Dr. F. Nadia, Sr. Registrar, Internal Medicine Indira Gandhi Memorial Hospital, Male, Maldives
14. Dr. B. P. Rijal, Ex. Microbiologist STAC, TUTH, Kathmandu.
15. Dr. Jayanthi Elwitigala, Microbiologist, National TB Reference Laboratory, Respiratory Disease Control Programme Chest Hospital, Sri-Lanka
16. Dr. Selva Kumar, Deputy Director & Head Mycobacteriology Division (IUATLD-Regional Advisor), Tuberculosis Research Centre (ICMR)/Chetput, Chennai - 600 031. India.
17. Dr. Md. M. Rahman, National Consultant, Epidemiology & Surveillance, WHO, NTP, Dhaka
18. Dr. R. M. Samarathunga, Medical Officer, Teaching Hospital, Kandy, Sri-Lanka
19. Dr. Rano Mal Piryani, Associate Professor, Ex. Dy. Director, STAC, Kathmandu
20. Dr. Sharad Onta, Executive Member, NHRC, Kathmandu
21. Dr. Madhur Deb Bhattari, Sr. Medical Consultant, Bir Hospital, Nepal
22. Dr. Kedar Narsing K.C. General Secretary, NMA, Nepal
23. Dr. Bhawana Shrestha, German Nepal Tuberculosis Project, Kalimati, Kathmandu
24. Dr. Anil Subedi, Director, BNMT, Lazimpat, Nepal
25. Dr. Peggy, Chief INF, Surkhet and Nepalgunj, Nepal
26. Dr. R. Chokhani, Sr. Chest Physician, Nepal Medical College
27. Dr. T. S. Barn, Technical Consultant, IUATLD, New Delhi, India
28. Mr. Sushil Baral, Health Research and Social Development Forum (HERD), Kathmandu, Nepal
29. Dr. Sabira Tahseen, Lab. Coordinator, NTP, Pakistan
30. Dr. Ejaz Qadir, Research Coordinator, National TB Centre, Pakistan
31. Dr. Asha Rao, UNFPA, Thailand
Abstracts
Abstracts for Oral Presentation on TB Control
(O/TB/1-26)
1. TREATMENT OUTCOME ANALYSIS OF MDR PULMONARY TUBERCULOSIS AT OJHA INSTITUTE OF CHEST DISEASES, KARACHI, PAKISTAN

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Introduction: The treatment of MDR tuberculosis is difficult because it is expensive, prolonged, and complicated which in turn result in poorer outcome. There is no reported data from Pakistan on treatment outcome of MDR tuberculosis.

Objectives: To assess the outcomes of multidrug-resistant tuberculosis (MDR-TB) patients treated at Ojha Institute of Chest Diseases (OICD), a reference hospital for TB in Karachi.

Methodology: Clinical study for the period 1996-2006. All the culture and sensitivity proven cases of MDR pulmonary TB were initially admitted for 3-6 months till the sputum converts negative. Supervised treatment was given to all patients during the hospitalization by specialized nurse. After a period of initial hospitalization, treatment was continued as out patient basis at OICD. Drugs for the month were pre-packed and handed over to the patient. Patients attended OICD at monthly intervals for clinical and bacteriological evaluations.

Results: Six hundred and twenty three adult patients (59.7% male) with mean age of 32.37 were studied. All patients had a history of treatment with first line antituberculous drugs. Treatment regimen was decided on individual basis. The most frequently used second-line drugs were 5-F-quinolones, cycloserine, kanamycin and ethionamide in susceptibility frequency used second-line drugs were 5-F-quinolones, cycloserine, kanamycin and ethionamide in susceptibility.

Treatment was successful in 238 (38.2%). The mortality rate was 31 (5%) during hospitalization, 31 (5%) defaulted the treatment during follow up period. Three patients were positive at the end of one year so they were labeled as chronic cases.

Conclusion: The main challenge in this study was high default rate that have an impact on final outcome. The high burden of MDR-TB, prolonged infection, treatment cost & difficulties, low rates of cure and treatment adherence can be improved by strengthening TB control programme activities.

Keywords: Outcome, treatment, MDR tuberculosis

2. FACTORS ASSOCIATED WITH NON-ADHERENCE (DEFAULTING) FROM ANTI TUBERCULOSIS TREATMENT UNDER DIRECTLY OBSERVED TREATMENT, SHORT COURSE (DOTS) IN BHOPAL (MADHYA PRADESH, INDIA) URBAN

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Introduction: Most important cause of Tuberculosis Programme failure is a low rate of treatment completion as non-adherent patients continue to transmit tuberculosis in the community. An effective programme considers patient needs and concerns, operational difficulties and human bond between patient and observer. To develop such philosophical approach, policy makers and programme managers should understand the predictive factors for non-adherence.

Objectives: To identify the predictive factors related to patient and health system associated with non-adherence (default) from anti tuberculosis treatment.

Methodology: Community based matched case control design, conducted in20 DOT centers of Bhopal urban between 1st Nov. 2006 to 31st Oct. 2007. Case - Patients documented as defaulterd ini TB register before simple random sampling;Control - Registered adjacent to default subject (completed their treatments/cured). Data analysis - SPSS version 14.0.

Result: Factors found significantly associated with non adherence -Frequent change of residence or homelessness (16.66%vs8.60%, OR = 2.3, SE of difference = 0.03, \( \chi^2 \) paired =4.36, \( p = 0.03 \)) Alcoholism (26.5%vs16.66%, OR = 1.76, SE of difference=0.047, \( \chi^2 \) paired=3.87, \( p = 0.04 \)) unaware about the consequences of preterm caesation of treatment (79.01%vs68.52%,OR=1.77, SE of difference= 0.048, \( \chi^2 \) paired =4.197, \( p = 0.04 \)) Surrendering wages on daily basis(57.40%vs43.20, OR=1.48 , SE of difference=0.066, \( \chi^2 \) paired=0.067,p=0.043). Insufficient information of disease & duration by providers (61.11%vs50.61% OR=1.77, SE = 0.032, \( \chi^2 \) paired = 4.197, \( p =0.029 \)), Intolerance to medicinal side effect (19.75%vs11.11% OR=2.076, \( \chi^2 \) paired =4.225, \( p =0.032 \)).

Conclusion: Structural issues in the RNTCP may be more important then individual risk behaviour. The programme should accountable to patientís convenience, preferences and his liabilities.

Key words: tuberculosis, non-adherence, urban, DOTS
3. STUDY OF RELAPSE AND FAILURE CASES OF CAT I REGISTERED FROM 1994 TO 2005 & RETREATED WITH CAT II UNDER RNTCP

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**Introduction:** Revised National Tuberculosis Control Programme (RNTCP) in India was implemented in 24th March 1997. Gulabi Bagh Chest Clinic is renowned chest clinic of Delhi and the pilot study of RNTCP was started in October 1993.

**Objectives:** To analyse the treatment outcome of Cat I smear positive Relapse and Failure cases when treated with Cat II under RNTCP for a period of twelve years.

**Methodology:** All Cat I smear positive cases registered from 1994 to 2005 in Chest Clinic Gulabi Bagh, Delhi covering a population of one lakh, were carefully followed up. Relapse and Failure cases arising out of these cases were put on Cat II regimen as per the RNTCP guidelines. The retreatment outcome data was reviewed and analyzed in each group.

**Results:** The study population included 5576 Cat I positive cases in Gulabi Bagh, Delhi from 1994 to 2005. The average cure rate was 88% (range: 84.8% to 93.7% over 12 years). The average failure rate was 3.4%. Out of total 4905 cured cases, 9% relapsed. The success rates of relapses & failure cases when put on Cat II regimen were 76% & 49% respectively.

**Conclusion:** The failure cases of Cat I when treated with Cat II showed significantly lower success rates (p<0.05) as compared to relapsed cases. The significant success rates of Cat I relapse cases when put on Cat II shows efficacy of Cat II regimen for treatment of relapse cases. In view of low success rate in failure cases of Cat I when put on Cat II the authors recommend reappraisal of Cat II for such cases or at least initial drug susceptibility testing before initiating Cat II regimen.

**Keywords:** Tuberculosis, Relapse, Failure, Treatment outcome.

4. A STUDY OF THE SOCIAL STIGMA OF THE PATIENTS RECEIVING DOTS UNDER RNTCP IN THE MUNGER DISTRICT OF BIHAR, INDIA

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**Introduction:** Acceptance of DOTS strategy in the Indian RNTCP has certainly brought encouraging success in the management of TB cases within the country. However, there are challenges to be met in the programme-implementation, before the RNTCP objectives are finally realized. One such challenge is the social stigma associated with the TB patients. The study attempts to find out the concerns of the TB patients who receive the DOTS within the same community.

**Objectives:** The study has the following objective

- To know the major concerns of the TB patients who are receiving the DOTS from the DOTS providers within the same community/village

**Methodology:** An interview was conducted of 256 TB patients who are receiving the DOTS within their communities/villages across the five development blocks of Munger district of Bihar.

**Results:** Of all the TB patients who were interviewed 53 per cent reported that they wanted to hide from the community that they have TB but they have to reveal it to others about their diseases because they have to take the DOTS from the providers within the village. 47 per cent said that taking DOTS had a negative impact on them with respect to social discrimination within the community. 53 per cent reported that because of DOTS several people in the community knew that they have TB which led to the discrimination.

**Conclusion:** Notions restricting the acceptance of TB patients are still prevalent in the minds of people and require a propagation of frequent IEC campaigns to remove the superstitions amongst the People.

**Key words:** DOTS, social stigma, TB patients
5. IMPACT OF PUBLIC PRIVATE PARTNERSHIP IN CASE DETECTION AND TREATMENT OUTCOME IN REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME, PIMPRI CHINCHWAD MUNICIPAL CORPORATION IN INDIA

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Introduction: Private medical sector is an important source of health care in India. Huge private medical practitioners network exist in urban area. Private practitioners (PPs) are generally the first point of contact for significant proportion of patients with tuberculosis. Public private collaboration promotes and facilitates active engagement of public and private health care providers in TB control. Present study explores extent of private sector involvement in control of tuberculosis. It finds out impact of public private partnership in case detection and treatment outcome under revised national tuberculosis Control Programme (RNTCP).

Objectives: To Study Impact of Public Private Partnership in case detection and treatment outcome in revised national tuberculosis control programme. To know strength and weakness in public private collaboration and its sustainability in resource limiting setup.

Methodology: City TB centre of Pimpri Chinchwad Municipal Corporation established 25 treatment observation centres in public sector and 175 in private health sector with PPs. Prospective observation study was carried out from January to December 2006. Total 2010 patients, of which, 761 were put on treatment at PPs directly observed treatment (DOT) centre. Case detection was analysed from PPs referral and TB laboratory registered while treatment outcome was followed after starting on treatment

Results: PPs contributed 22.9 percent, 16.3 percent and 7.1 percent new smear positive (NSP), New smear negative (NSN) and new extra pulmonary case detection respectively. Treatment outcome revealed NSP cure rate 83.2 percent at public sector with default rate 6.3 percent while at private sector it is 84.7 percent and 3.8 percent respectively. Treatment outcome of NSN cases discloses 80.9 percent treatment completed at public sector and 86.8 percent at private sector.

Conclusion: Private sector contributed 37.8 percent of DOT provision. PPs contributed nearly one fourth of total new sputum positive case detection. High cure rate and less default rate observed at PPs DOT Center.

6. A STUDY OF SOCIODEMOGRAPHIC PROFILE OF DOTS PATIENTS IN RELATION TO ACCEPTABILITY AND DEFAULTS IN RNTCP REGIMENS

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Introduction: Tuberculosis, India accounts nearly 1/3rd of the global burden. Every year approximately 1.8 million persons develop tuberculosis of which about 0.8 million are new smear positive highly infections cases and about 4.17 lakh people die of TB every year. Prevalence of disease was 4 cases per 1000 population which is 4 times as high as incidence. RNTCP has been commissioned in 1993 using DOTS strategy. Patients diagnosed accurately, drug supply is regular uninterrupted and there has been sticking increase in proportions of patients cured in DOTS therapy.

Objectives: To study the prevalence of defaults RNTCP regimen, to study the socio economic and cultural factors related to defaults and to study the acceptability factors in patients successfully receiving treatment

Methodology: Cross sectional community based study randomly selected with a sample size of 430 patients who are on DOTS. Data collected by interview method during the period of oct2007 ñmar2008. The study variables are age, sex, literacy, occupation, income, cultural factors, and causes for defaults Using EPI info, percentages and chi square were applied to analyze data.

Results: Majority had heard about tuberculosis 90% and 89.2% (98) perceived to be an infectious agent. 85% (93) knew cough as a symptom more than 3weeks. Nearly 88% (96) perceived tuberculosis to be preventable disease. Most of them belongs to low socioeconomic status 81% (89), males 66% (73), illiterates 72% (79) which are statistically associated with default of treatment. Defaults were 22% (24). Majority of defaults by migration felt well, side effects, working hours, far centre, alcohol, inconsistancy of drug supply.

Conclusion: Despite facing some stigma and inconvenience, health education regarding DOTS therapy has to improve to reduce defaults and success of programme.

7. INCIDENCE OF TUBERCULOSIS AMONG HILLY POPULATION OF UTTARAKHAND

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Introduction: Tuberculosis is a worldwide, chronic communicable bacterial disease known since ancient times.
It is very strange disease because of varied clinical presentation, host response, chemotherapeutic response, etiology & social implications. It continues to be one of the most important public health problems worldwide. It infects 1/3rd of worldís population at any point. India accounts for nearly 1/3rd of the global burden of TB.

Objectives: To assess the incidence of TB, proportion put on anti tubercular treatment (ATT) and proportions suffering from Pulmonary TB (PTB) and Extra Pulmonary TB (EPTB).

Methodology: An interventional study was conducted among population covered by Community Health Centre (CHC) selected by purposive sampling from district Dehradun. It caters for 1.5-lac population. All patients with symptomology of TB were selected and thoroughly examined. Diagnosis was confirmed using various tests like sputum examination, X-ray chest, FNAC of Lymph nodes, PCR etc. later patients with positive results were subjected to ATT according to categories as per rules of RNTCP. Data was compiled and analyzed using a suitable statistical package.

Results: 1740 symptomatics were subjected to sputum examination, out of which 195 (11.2%) were sputum positive. Incidence of new cases was found to be 1.3/1000 population. On the other hand a total of 235 patients were put on ATT as per DOTS categories. Out of these 110 were put on category I, 32 on category II and 63 on category III. Among the cases 62.7% were males. 40 cases were having EPTB where maximum had lymphadenopathy followed by milliary TB.

Conclusion: There is an urgent need to strengthen the health services as many patients are missed due to decreased accessibility to populations residing in hilly areas.

Keywords: Tuberculosis, incidence, Pulmonary and Extra-pulmonary tuberculosis

8. TUBERCULOUS MYCOTIC ANEURYSM OF AORTA

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Introduction: Tuberculous mycotic aneurysm of aorta is a rare occurrence with less than 50 cases reported and has a poor prognosis. Thoracic and abdominal aortas are affected with equal frequency. With an active focus elsewhere and with persistent abdominal or chest pain or hypovolemia or major bleeding or pulsatile or expanding abdominal mass ñ suspect it. Early diagnosis combined medical and surgical therapies and close post operative follow up may help to prevent recurrence.

Keywords: Tuberculous mycotic aneurysm, Aorta

9. A STUDY OF IMPACT OF GENDER DIFFERENCE ON FACTORS ASSOCIATED WITH TREATMENT SEEKING BEHAVIOR OF FEMALE TB PATIENTS AND SOCIO-CULTURAL BARRIERS AFFECTING IT

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Introduction: About seventy percent excess of male over female TB cases are reported each year, the reasons for this difference are unclear. This study attempts to reveals that there is significant gender difference in treatment seeking behaviors of female in rural communities.

Objectives: The objective of the study is to know the major concerns of female TB patients in Munger district of Bihar.

Methodology: The methodology comprises of analysis of last one-year data of all the female clients who attended the Referral Center of LEPPRA Society in Munger district where the diagnosis and counseling for TB is done.

Results: Out of the total number TB patients who came to the Referral Center, 69 where females. 37 had under gone treatments from traditional healers & Rural Medical Practitioner in the past resulting in delay in diagnosis and proper treatment. The mean patient delay was about 6-9 months and in that period they kept spreading their diseases.
The socio-cultural barriers affecting them were -

- 67% wanted to hide from the community that they have TB
- 38% had problem with their spouse and other family member after being labeled as TB patient
- Details finding will be presented in the conference

**Conclusion:** The study findings suggest that there is a significant gender difference in treatment seeking behavior among rural communities. Based on the study findings, it is strongly recommend that an appropriate gender strategy for Tuberculosis control program should be developed with special emphasis on socio-cultural and community awareness interventions aimed at treating undiscovered bulk of female Tuberculosis cases in rural community.

**Key worlds:** Socio-cultural barriers, Tuberculosis patients.

### 10. DIAGNOSIS OF TUBERCULOSIS, STILL A CHALLENGE IN RESOURCE POOR AND REMOTE AREAS

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**Introduction:** Significant mortality and morbidity is caused by Tuberculosis (TB) in developing countries including Nepal. Due to lack of diagnostic resources and poor yield of conventional diagnostic methods, there is a considerable delay in starting appropriate treatment. The initial diagnosis of pulmonary tuberculosis (PTB) and extra-pulmonary tuberculosis (EPTB) depends on high index of clinical suspicion, chest radiograph, and fluid analysis and is confirmed by sputum and tissue smear/culture that show tubercular bacilli. Routinely available diagnostic tests may suggest tuberculosis but they do not provide definitive diagnosis of active tuberculosis. Development of liquid media, DNA (deoxyribonucleic-acid) probes, polymerase chain reaction (PCR) assays allow more sensitive and rapid diagnosis but they are technically demanding and expensive.

**Objectives:** Evaluate the mode of presentation, diagnostic modalities implemented, treatment and outcome among pulmonary and extra-pulmonary tuberculosis.

**Methodology:** Retrospective analysis of 218 patients under treatment in Directly Observed Treatment Short-course (DOTS) with a provisional diagnosis of tuberculosis was carried out. Characteristics of demography, clinical features, diagnostic tests and complications were obtained from medical case records.

**Results:** 50% of the patients were in age group 15-55yrs. Male to female ratio was 1.36. 53% were PTB and of them 54% were sputum smear positive. The common sites for EPTB were lymph nodes (26.2%), pleura (23.5%), peritoneum and/or intestine (14.7%). 6.45% were Relapse/failure. Death due to TB was 3.22%. PTB was diagnosed based on clinical findings and chest radiograph suggestive of tuberculosis and from sputum smear. EPTB was diagnosed based on clinical presentation, no improvement with antibacterial therapy, biopsy and fluid analysis from possible sites. No bacteriological confirmation was made in any of the EPTB cases

**Conclusion:** Making the diagnosis of tuberculosis is challenging in EPTB and in children. Therefore development of rapid, simple and accurate diagnostic tools with applicability at point of care and remote areas is essential.

**Keywords:** tuberculosis, extra-pulmonary, pulmonary, diagnosis

### 11. EXTRAPULMONARY TB PRESENTATION AND OUTCOME IN DOTS

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**Introduction:** Various forms of Extrapulmonary tuberculosis cases are on rise since the HIV epidemic set in and rare forms may be seen, however their presentation & outcome needs to be studied when treated with DOTS in revised national tuberculosis control programme (RNTCP) in a medical college DOTS centre.

**Objectives:** To study presentation of Extra-pulmonary tuberculosis, to evaluate outcome of regimen, to evaluate defaulters if any.

**Methodology:** Retrospective analysis of all EPTB cases registered & taking t/t at DOTS centre at IGGMCïperiod Feb. 2003 to Dec. 2006., T/t is thrice weekly supervised DOTS, total duration of T/t is 6-8 months. Categorisation, Criteria of inclusion, Outcomes are predefined in RNTCP.

**Results:** In all 167 cases of EPTB were registered at this DOTS center, No. of EPTB cases were gradually increasing from 27 to 46, most 136 (81.44%) were in younger age group of 10 - 40 yrs.

M:F ratio was 1:1.1 almost equal. The various type of cases were

- 43.17% pleurisy
- 31.13% lymph node TB
- 8.98% Abd TB
- 7.78% musculoskeletal TB
- 3.59% genital TB
- 4.79% ocular TB

Patients received different categories of treatment depending on severity of diseases.
T/t outcome was favorable i.e. T/t completed in 137 (82.03%) and was unfavorable in 30 patients, of which defaulted- were15.56%, failure- nil, died ñ 2.39%.

Of the defaults most i.e. 15 (57.6%) were in first two months of treatment and could not be correlated with drug toxicity.

Conclusion: It appears though various regimens under DOTS are well tolerated and highly effective with favourable outcome, the default rate is high in spite of DOTS, more efforts are needed to prevent defaults, specially address tracing and to send the patient to his own address before starting the treatment as well as during T/t.

Keywords: re-treatment, DOTS, TB RNTCP

12. BPKIHS TB MODULE: AN INNOVATIVE WAY TO TEACH TUBERCULOSIS TO MEDICAL UNDERGRADUATES

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Introduction: Tuberculosis is a public health problem. Medical schools must adopt and use their potential to contribute proactively in shaping the future of the health system. By introducing changes in medical education, research and delivery of care for TB control, medical schools have the unique opportunity to demonstrate social accountability. Medical school should provide every medical graduate with knowledge, skills and attitude essential to the management of TB in the patient and community as a whole. They should have an effective educational strategy to provide such ability to their students.

BP Koirala Institute of Health Sciences, Dharan, Nepal has been teaching TB to medical undergraduates by using its own module for many years.

Objectives: The objective of this study was to know the feedback from the student about this TB module.

Methodology: The feedback was taken from the undergraduate student after the modular teaching in different years.

Results: All students felt that the objective of this module is clear. Majority (more than 85 %) of the students said that content and duration student participation were adequate. The visits to DOTS centre NATA were informative and useful.

Conclusion: This TB module gives a comprehensive and complete practical knowledge as well as skills on the diagnosis and management of TB with special reference to DOTS to the students. This module makes them complete manager for the prevention and control of TB. The use of this TB module is recommended in other medical schools, where TB is a public health problem.

Keywords: TB module, TB, Nepal

13. FACTORS INFLUENCE DOT IMPLEMENTATION AND ADHERENCE TO TUBERCULOSIS TREATMENT IN RAYALASEEMA, ANDHRA PRADESH

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Introduction: India has an estimated 5 million people with tuberculosis (TB). Official policy is that treatment of all patients is directly observed by health workers; completion rates are reported to be in reduced and drugs should be supplied for free. However, some research suggests there is a gap between the official policies and practice.

Methods: The study municipality is Tirupati Municipal Corporation, in Southern Andhra Pradesh, with a population of 4 Lakhs, living in a mountainous area, with a socio-economic profile below average (BPL). The researcher purposively selected four urban slums as representative of the study, in terms of socio-economic development, geographic and transportation condition. Survey of TB patients in Tirupati municipality; record assessment at one TB centre; patient and village doctor in-depth interviews.

Results: More than Sixteen per cent reported being directly observed every time they took treatment; less than one tenth of TB patients were observed by health staff. Overall, more than one-tenth of the respondents reported that they had not taken any TB drugs in the previous week, Most TB patients said that they took drugs on their own at home and knew nothing about the records of drug taking. Many patients described being treated differently by people in their immediate communities after getting TB. They suggested neighbours or friends did not like to talk with them, or kept a certain distance while talking with them for fear of infection. TB patients tended to conceal their disease from others for fear of being isolated. Qualitative research indicated direct observation is neither well understood nor thought to be necessary, and that patients reported being charged expensive fees for ancillary treatments, such as liver protection drugs.

Conclusion: The concept of free treatment has become blurred, with charges for additional tests and drugs.
government is already actively tackling these issues, and involvement of health workers and others in this process will be helpful.

14. ALL MEMBERS OF A SINGLE FAMILY INCLUDING A 5-MONTHS OLD INFANT HAVING TUBERCULOSISñ A CASE REPORT -

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A 5-months old male infant, immunized as per EPI schedule, 2nd issue of a nonconsanguinous parents residence at Lalbag, Dhaka from a poor socioeconomic background was admitted into the Paediatrics ward, Bangladesh Medical College Hospital on 11th March 2004 with fever for 1 month, dry cough for 21 days, loose motion and vomiting for 14 days. He was weaned from breast milk at 3 months of his age and there was gross malfeeding history. BCG vaccine was given at 6 weeks. His mother had also been suffering from recurrent febrile illnesses and weight loss for many months. Baby was looking ill but conscious, mildly pale, afebrile with no dyspnoea. Z score of wt/age, lth/age, wt/lth and OFC were -2.9, -3.5, -0.3 and 0.3 respectively. Fontanel was open and normal. There was no lymphadenopathy and BCG mark was present. Breath sound was vesicular with fine crepitation on right lung. He was treated initially as septicemia by combined parenteral antibiotics. But response was not satisfactory. Lab data yielded raised ESR, eosinophilia, pyuria and haematuria with sterile culture. Chest X ray was abnormal. MT was done and found positive in all cases. CSF study revealed typical pictures of tuberculous meningitis. MT was done in all children. CSF study revealed typical pictures of tuberculous meningitis. MT was done and found strongly positive (18mm/72hrs.). Other family members were immediately screened for tuberculosis and all revealed positive. Complete Blood Count, MT and Chest X ray were chosen as screening methods for them to diagnose tuberculosis. We started anti tubercular therapy to all of them immediately. They all were cured. At present, they are healthy and baby is now 4 years of age with good physical and mental growth.

Key words: Tuberculosis, Tuberculosis in infant, Pan family tuberculosis.

15. CLINICAL PRESENTATION AND OUTCOME OF SIX CHILDREN WITH TUBERCULAR MENINGITIS IN BANGLADESH MEDICAL COLLEGE HOSPITAL

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Background: Tubercular Meningitis (TBM) is a dreadful disease with high mortality and morbidity commonly occurring within 6 months of primary infection.

Objectives: To see the clinical presentation, laboratory data and to observe the response to treatment.

Materials and Methods: This is a prospective observational study conducted in the Bangladesh Medical College Hospital (BMCH), Dhaka, Bangladesh from May 2003 to April 2004. Six patients aged 6 months to 10 years admitted in Paediatric ward who were clinically suspected to have TBM and confirmed by CSF study were included in this study.

Results: There were 4 male and 2 female patients with a mean age of 4.6 ± 4.2 years. Four (66.7%) cases came from outside Dhaka. Majority belonged to low-income group (83.3%) and all study children were malnourished of different grades. Mostly were admitted with 3-4 weeks (33.3%) of illness. Three (50.0%) cases presented in stage-II and 3 (50.0%) in stage III. Fever was present in all cases followed by night sweats, loss of appetite (66.7% each) and weight loss (33.3%). Headache, vomiting, convulsion and loss of consciousness were present in 3 (50.0%). Fever (100.0%), meningeal signs (100.0%), very ill looking (50.0%), unconsciousness (50.0%) and pallor (66.7%) were documented as physical signs. BCG scar mark was present in 5 (83.3%) study children. MT was negative in all cases. CSF study revealed typical pictures of TBM. Chest radiograph showed abnormality in 5 (83.3%) cases. Response to treatment was maximally observed between 5-10 days (66.6%). Total hospital stay was variable. Out of 6 cases five were cured without any sequelae with one death.

Conclusion: Prognosis of TBM largely depends on stage of presentation. Early clinical suspicion and diagnosis at initial stage followed by proper treatment can save the children from its immediate and long term sequelae as well as mortality.
16. AN UNUSUAL PRESENTATION OF PULMONARY TUBERCULOSIS IN A CHILD WITH RECURRENT NEPHROTIC SYNDROME

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Case summary: Hridoy, a 7-year-old boy, only child of non-consanguineous poor parents, immunized against all EPI target diseases, coming from Pabna, Bangladesh; presented with huge generalized edema, scanty urine, cough and shortness of breathing for 6 days. He had no fever, cough or breathlessness before. He suffered from steroid responsive nephrotic syndrome 4 times earlier. This is the 4th relapse of nephritic syndrome but this time with additional cough and shortness of breathing. Physically the child was very ill looking with fast breathing and moist chest. Treatment was immediately started with ceftriaxone, gentamicin, oxygen and nebulised salbutamol and ipratropium. Diuretic was added to combat huge edema. CBC showed normal white cell count with eosinophilia (14%). ESR was 80 mm in the first hour. Chest x-ray showed a huge mass extending upward from the diaphragmatic margin with well defined borders and evenly opaque field mimicking large mediastinal mass, occupying the most of the right chest beside the paracardiac region. Tuberculin skin test was negative. CT suggested pulmonary tuberculosis with endobronchial spread. Anti-tubercular therapy was instituted and the mass rapidly regressed with dramatic improvement in his general condition. Follow up chest x-ray Edema responded to oral prednisolone in nephrotic dosage. After remission of edema the boy weighed 13 kg (61%).

17. ACMS IN TB CONTROL: EXPERIENCE OF BRAC


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Introduction: BRAC an NGO, in collaboration with NTP providing TB services to major part of Bangladesh covering approximately 88 million population. Advocacy, communication and social mobilization (ACSM) component is an integral part of BRACs community based TB programme focusing enhanced community involvement and its strengthening.

Objectives: To involve the community, enhance awareness on TB and generate support at policy level that will lead to early diagnosis and treatment adherence; and thus, increase overall case detection rate and sustain high cure rates.

Methodology: Female community health volunteers known as Shasthya Shebika disseminate information on TB through their regular visits at household level. Orientation with different stakeholders was conducted to raise awareness and enhance mass involvement in programme. Interaction with policy makers, professionals and media personnel were done through round table meetings, workshops and talk shows in TV channels. Social communication events like street drama and folk song on TB messages performed by local groups in remote areas. Features and articles on TB were published in newspaper. Leaflets, posters, stickers and billboards were developed as awareness raising materials.

Result: In 2007, total 18,674 opinion leaders; 2,565 scouts & girl’s guide; and 19,099 cured TB patients were oriented on TB. 1,146 social communication events (street drama & folk songs) were held. Total 37 round-table meetings were conducted with policy makers, professionals, media personnel, implementers and civil society at different level. Besides airing of TV and radio spots, 117 TB related news telecasted on different TV channels. 115 articles and 334 TB event related news published in newspapers.

Conclusion: ACSM activities involve different segments of the society and bring changes in the service seeking of the people and thus enhance referral to service points. Community involvement at grass root level is effective to reach higher number of people.

Keywords: ACSM, Community participation, Tuberculosis control

18. ENGAGING ALL CARE PROVIDERS: BRAC EXPERIENCE IN TB CONTROL

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Introduction: BRAC an NGO working in collaboration with National TB Control Programme. Main approach of BRAC is the community based service provision by involving community. BRAC is engaging different care providers to enhance the TB Control.

Objectives: To enhance the involvement of different care providers including workplaces and thus to increase their participation in referral of TB suspects, raising awareness on
Tuberculosis and provision of DOT following the national guideline.

**Methodology:** Non graduate practitioners such as village doctors and drug sellers at pharmacies, who are the first point of contact of majority of the suspects in Bangladesh, were oriented on TB. Qualified private practitioners also were oriented. These providers refer cases for diagnosis, counsel patients and some of them also act as DOT providers. Orientation of factory workers and management authorities were also conducted to enhance workplace TB control.

**Results:** In 2007, 19,734 village doctors and drug sellers, 5,119 factory workers and 505 factory management staff were also oriented on TB. Total 2,379 qualified private practitioners were also oriented on Tuberculosis.

**Conclusion:** Strengthening linkage and regular follow up mechanism for the participants who have been oriented would be helpful in PPM DOTS intervention. Scaling up of these activities is needed with ensuring the compliance of National Guidelines.

**Keywords:** Engaging all care providers, PPM

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**19. BRAC TUBERCULOSIS CONTROL PROGRAMME: CONTRIBUTION TOWARDS HEALTH SYSTEM STRENGTHENING**

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**Introduction:** BRAC started community based TB control program in 1984. Currently BRAC and NTP jointly expanded this model to two thirds of Bangladesh covering 88 millions population. Community participation especially in case detection, home-based DOT and referral system of this approach added additional strength to health system.

**Objectives:** To strengthen the health system by involving community in TB control program, augmenting community health worker networks and capacities.

**Methodology:** BRAC works closely with Government in TB programme implementation and contributes substantial role in strengthening the major areas of health systems. BRAC addresses the gaps in human resources at service points and community level. Community health volunteers (known as Shasthya Shebika) are involved to increase awareness on TB, referral and ensuring DOT. BRAC established additional laboratories in local government facilities which caused better utilization of them. Routine outreach sputum collection centers are organized below sub district level at community settings. Different stakeholders at local level are engaged through coordinated advocacy, social mobilization and communication activities.

**Results:** Currently 2,574 staffs and about 70,000 community health volunteers are involved in BRAC TB control programme. Beside Government laboratories at sub district level, 276 additional laboratories have been established in BRAC supported areas. Case detection rate of smear-positive new cases in BRAC supported area was 79% in 2007 and treatment success rate of patients treated in 2006 was 94%.

**Conclusion:** Successes achieved to be sustained through partnership approach. Resource mobilization, capacity building and human resource are crucial to maintain this success.

**Keywords:** Health System Strengthening, DOTS expansion

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**20. GENDER DIFFERENTIATED REASONS FOR DEVELOPING TUBERCULOSIS**

*Kazmi N*

**Introduction:** Currently, Pakistan is listed among the six countries with TB is alarming. According to estimates the incidence to TB is 250,000 per year. The government of Pakistan has attached high priority in eradicating TB.

Men and women perceive the prevalence of disease differently. A survey conducted on eGender Perspectives in Knowledge, Attitude and Practices Concerning Tuberculosis in Pakistani reveals that the very first reaction to TB is ideath sentence by a female and idangerous illness leading to death by male. Moreover, women are more likely to get TB in their economic and reproductive age. There was a need to investigate the causes for the gender differentiated reasons for developing TB. The study would be helpful for policy makers.

**Objectives:** The purpose of the study is to analyze; firstly the perception of female vs. male about the tuberculosis, and secondly to examine what are the gender differentiated causes for being at risk of Tuberculosis.

**The methodology:** The study is designed on the basis of qualitative study approach. A sample of tuberculosis patients selected from a private and a public hospital. The sample collected has representation of men and women; and lower and middle income groups. Unstructured questionnaires were designed to gather the information. The data then collected is analyzed qualitatively.

**Results of the study:** The reasons for being at risk are different for men and women. Women are found to be more vulnerable as they are the ones who are malnourished, home bound and are mostly caregivers to a TB patient.

**Conclusion:** Specials needs for women are highlighted in this paper. The value of the care economy should be
highlighted and special programs should be designed to target the women who are malnourished and are providing care to TB patients.

21. A WOMAN WITH SECONDARY AMENORRHOEA AND PRIMARY SUBFERTILITY DUE TO ENDOMETRIAL TUBERCULOSIS- A CASE REPORT

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Abstract: A 28-year old married nulliparas woman coming from Mirpur, Dhaka, Bangladesh belonged to poor socioeconomic background was admitted into the Gynae Ward of Bangladesh Medical College Hospital (BMCH) with secondary amenorrhoea and primary subfertility. Her menarche was at usual age and menstruation was initially regular. She was married for 5 years and trying to conceive for the same duration but failed. She was seen by several gynaecologist without any satisfactory outcome. Her other family members were healthy and there was no history of contact with known case of tuberculosis (TB) patient. She had no chronic debilitating illness like thyroid disease, cushing syndrome, chronic obstructive pulmonary disease (COPD) etc. She was ill looking, pale, anxious and malnourished. Vital signs were normal without any lymphadenopathy. Per abdominal findings revealed normal. Per vaginally, uterus was found normal in size, anteverted and mobile with no adnexal pathology. Laboratory data including haematological, radiological, urinalysis, biochemical (e.g. blood sugar, renal function test) and hormone profile were within normal limit. As the working diagnosis remained nonconclusive we went for laparoscopy. Uterus and ovary were normal but both fallopian tubes were found dilated with beaded appearance and dye test was negative bilaterally. No adhesion and endometriotic implants yield. Endometrial curettage done and sent for biopsy, acid fast bacillus (AFB) staining and culture. Although AFB staining was negative with sterile culture, histopathology revealed granulomatous inflammation suggesting histologically tuberculosis. We started anti tubercular therapy (ATT) with four drugs for 6 months regimen after consult with pulmonologist. As she showed clinical improvement following initiation of ATT we discharged her and advised for follow up.

Key Words: Endometrial Tuberculosis, Tuberculosis

22. CLINICAL PRESENTATION OF PULMONARY TUBERCULOSIS AND ITS RESPONSE TO ANTI-TUBERCULAR DRUGS IN CHILDREN IN BANGLADESH MEDICAL COLLEGE HOSPITAL

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Background: Bangladesh ranks 5\textsuperscript{th} among the countries with highest tuberculosis burden. One person dies of tuberculosis in each 8 minutes. More than 50% of the population in this country are infected with M tuberculosis. Incidence and prevalence of this disease among children in this country are not exactly known. Clinical experience shows that tuberculosis is very common among admitted children in the pediatric wards.

Materials and Methods: This descriptive cross sectional study was conducted in the pediatric department of BMCH from January 2003-December 2004 using a structured questionnaire. A total of 90 children; 6 months-14 years of age having suspected pulmonary tuberculosis; were studied in terms of clinical presentations, physical findings, laboratory investigations and response to treatment.

Results: Mean age was 5.42±3.9 years, M:F is 1.7:1. Common symptoms were fever 85 (94.4%), cough 78 (86.7%), breathlessness 22 (24.4%), weight loss 46 (51.1%) and loss of appetite 49 (54.4%). Physical signs were very ill look in 23 (25.6%), moderate to severe pallor 22(24.4%), crepitations 36 (40%) and generalized lymphadenopathy 13 (14.4%) cases. Mean ESR in the first hour was 45.80 mm. Mean MT was 10.20 mm after 72 hours. Chest X-ray revealed enlarged hilar lymph nodes in 71 (78.9%), parenchymal opacities 25(27.8%), cavitations 17 (18.9%) cases. Pleural effusion was seen in only 9 (10%) study children. Among the respondents, 78 (86.7%) had completed all vaccines under EPI schedule; BCG scar being absent in 12 (13.3%) cases. Forty-three (47.8%) had family contact of TB. Anti tubercular drugs were given to 85 cases of which 83 (97.6%) responded well.

Conclusion: pulmonary tuberculosis in children can be diagnosed by its clinical presentations and physical findings alone and can be supplemented by important laboratory
findings and responds well to anti-tubercular therapy when given under proper supervision.

**Key words:** Childhood tuberculosis, Tuberculin test

### 23. Nepal National TB Programme: Progress of DOTS PLUS programme for treatment of Multi Drug Resistant Tuberculosis & key challenges faced by NTP & Patients

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**OBJECTIVE:** To review the progress of the DOTS PLUS pilot project on completion of three years and to determine key challenges faced by NTP and patients

**Background:** The Nepal National Tuberculosis Control Programme started Green-Light Committee approved DOTS PLUS PILOT project from September 2005 using standardized treatment regimens. Currently NTP is offering DOTS Plus programme services through 10 Treatment and 31 Sub Treatment Centres covering all administrative Regions of the country.

**METHODS:** Standardized treatment (Kanamycin, Ethionamide, Cycloserine, Pyrazinamide, Ofloxacin) is offered for Category 2 failures and other culture confirmed Multiple Drug Resistance. Free daily treatment including prophylactic side effect drugs; Ranitidine and Pyridoxines are given by trained Health workers. Monthly medical reviews include smear and culture testing, and blood monitoring for Potassium and Creatinine.

**RESULTS:** Since start of DOTS Plus programme 486 MDR TB patients have been enrolled for treatment by end of August 2008. Treatment outcome for patients registered during each year is as following:

<table>
<thead>
<tr>
<th>Year</th>
<th>Cured</th>
<th>Failed</th>
<th>Default</th>
<th>Died</th>
<th>Transfer</th>
<th>Still on Treatment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>65 (71.4%)</td>
<td>6 (6.6%)</td>
<td>12 (13.2%)</td>
<td>6 (6.6%)</td>
<td>1 (1.1%)</td>
<td>0</td>
<td>91</td>
</tr>
<tr>
<td>2006</td>
<td>77 (57.0%)</td>
<td>4 (3.0%)</td>
<td>28 (20.7%)</td>
<td>9 (6.7%)</td>
<td>2 (1.5%)</td>
<td>13 (9.2%)</td>
<td>148</td>
</tr>
<tr>
<td>2007</td>
<td>0</td>
<td>1 (2.9%)</td>
<td>13 (37.1%)</td>
<td>9 (25.7%)</td>
<td>1 (2.9%)</td>
<td>1 (3.8%)</td>
<td>35</td>
</tr>
<tr>
<td>2008</td>
<td>0</td>
<td>0</td>
<td>1 (3.8%)</td>
<td>4 (15.4%)</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Key challenges observed during the initial three years of DOTS PLUS pilot project are lack of socio economic support for patients including cost of transportation, food and accommodation. Another key issue is lack of infection control in the health institutions for reduction of transmission of MDR TB to health care workers.

**CONCLUSION:** Nepal DOTS-Plus programme is well organized, delivering a standardized treatment with excellent treatment outcome. Two most pressing issues for the programme are provision of required socio economic support to patients and decrease risks of transmission of MDR TB to health care workers.

### 24. CURRENT SITUATION OF TUBERCULOSIS DRUG RESISTANCE IN NEPAL: RESULTS OF 4TH TUBERCULOSIS DRUG RESISTANCE SURVEY

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**Objective:** To determine prevalence of anti TB drug resistance in a representative sample of patients with sputum positive tuberculosis (TB) in Nepal.
Introduction: The fourth Tuberculosis drug resistance surveillance was carried out by Nepal National TB Programme in 2006/2007 as part of the Global IUATLD WHO anti TB drug surveillance programme. Key objectives of the surveillance are to; 1) To determine the prevalence of drug resistance to anti-TB drugs in sputum positive patients, 2) To compare the trend of drug resistance pattern with the previous ones

Methods: A total of 1109 samples from sputum smear positive TB patients at the start of their first treatment or re-treatment from 33 random clusters (32 samples/cluster) were collected. Sputum smear negative and Extra Pulmonary TB cases and sputum cultures showing no growth were excluded from the survey. All contaminated and culture shown negatives were repeated.

Culture was performed using Lowenstein-Jensen/MGIT while for drug susceptibility testing of the first line TB drugs (HRSE)/proportion method was used. Culture and Drug sensitivity testing were done at GENTUP lab in Kathmandu.

Data entry and analysis was done using SDRTB4, the 4th version of the software for ìSurveillance of drug resistance in Tuberculosisî developed by World Health Organization.

Results: 1109 sputum samples were collected from 33 randomly selected clusters (32 samples/cluster). Drug Sensitivity Testing results are available for 930 patients. Any resistance among new cases was 14.8%. Multi-drug resistance is 2.9% in new cases and 11.7% in previously treated cases. Highest resistance among new cases was to Streptomycin (10.7%) while among re-treatment patients it was greatest to Isoniazid (22.8%). Both any resistance and multi drug resistance were highest in the age group 14-25 years. Similarly, any resistance and MDR was higher among male patients in all age groups.

Conclusion: The 4th Multi Drug Resistant Tuberculosis Survey was completed in Nepal in 2006; there is no significant increase in multi drug resistance compared to the surveys carried out in the past. Multi Drug Resistance is 2.9% among new and 11.7% in previously treated Tuberculosis cases. Both any resistance and multi drug resistance were highest in the age group 14-25 years. Similarly, any resistance and MDR were higher among male patients in all age groups.

Objectives: As a partner of National Tuberculosis Control Programme how far NATAB is contributing to make the programme successful

Methodology: Used data has taken from the regular MIS report of NATAB and the annual report of National Tuberculosis Control Program of Bangladesh.

Results: The district-committee advocates for a patientís right to access services at local level. The central committee of NATAB always tries to keep the link with the service delivery situation of the TB control program. So, if there is any need to provide support in any district, NATAB central committee promptly provides support to the respective district. The experience is showed that if the advocacy program is good the case detection rate is also good. We found a positive relation between the performance of NATAB district committee and the service delivery performance. In the districts where
NATAB has the better performing committees, the case detection and the cure rate is good. NATAB has 62 district committees out of 64 districts. Almost 20 (32%) district committees are doing very well and in those districts detection rate is more than 95% and the treatment success rate is more than 90%. Utilizing this experience, NATAB emphasize more in some of the low performing districts by strengthening the district committees to raise the case detection rate and the treatment success rate. For this reason other 15 (25%) district committees are now becoming stronger in the low performing districts. From different discussion meetings with the civil society we found, lack of information is the main reason of the low performance and inaccessibility is the other reason.

Conclusion: NATAB perform the activities through district-level meetings, regional meetings where several neighbouring district committee member come together and discuss the future course of the advocacy and social mobilization effort, celebrate World TB Day centrally and in all districts of the country. NATAB also organizes National Conference for top government and non-governmental officials, various health professionals, district committee members and field level staff.

26. PROSPECTIVE STUDY TO FIND OUT THE INCIDENCE AND TYPES OF OCULAR INVOLVEMENT IN ACTIVE SYSTEMIC TUBERCULOSIS IN NEPALESE POPULATION

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Objective: This study was carried out to identify different types of Ocular manifestations in the cases of newly diagnosed cases of Tuberculosis in Nepal.

Methods and Materials: The cases of newly diagnosed tuberculosis at National Tuberculosis center Thimi, Bhaktapur, Nepal and patients with newly diagnosed as tuberculosis and referred from DOTS center, Tribhuvan University Teaching Hospital to B.P Koirala Lions Center for Ophthalmic Studies. Detailed ocular examination was carried out in all these cases

Results: Out of 601 cases of newly diagnosed tuberculosis, 16 cases (i.e 3%) showed ocular manifestations. Majority of the cases with ocular manifestations were male and from economically productive age group. Out of 16 cases, 11 had presumed ocular Tuberculosis.

Conclusion: 16 cases (3%) showed ocular manifestations and after ATT they showed both clinically and symptomatically improvement. The most common ocular manifestations were uveitis (anterior, Intermediate, Posterior and Planuveitis) followed by sclerouveitis, phlyctenular conjunctivitis, Retinal vasculitis, Abducent nerve palsy and Optic atrophy.

We found that the cases with extra-pulmonary Tuberculosis showed higher incidence of ocular manifestation as compared to the Pulmonary Tuberculosis cases.

Most of the cases diagnosed as active systemic Tuberculosis had no Ocular complaint.

We feel that all the cases with active systemic Tuberculosis must undergo thorough ophthalmic evaluation in order to rule out any Ocular affliction and prevent blindness.
1. MEDIA ADVOCACY PROGRAM ON CARE, SUPPORT AND TREATMENT FOR PLWA COMMUNITY IN BANGLADESH

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Introduction: HIV related stigma and discrimination remains a major barrier to fight against HIV and AIDS epidemic in Bangladesh. Fear of discrimination often prevents peoples from getting tested, seeking treatment for AIDS or from admitting their HIV status publicly. Stigma and discrimination are not only obstacles to HIV prevention, care and treatment for people living with HIV, but expands terrible consequences.

Key challenge in Bangladesh for Treatment and Care is availability of and cost effective antiretroviral, other drugs for the treatment of opportunistic infections, adequate Healthcare infrastructure, education and training of health care workers.

There are limited care, support and treatment provisions for peoples living with HIV/AIDS (PLWA) in Bangladesh. Although antiretroviral drugs are already registered for manufacturing, these are not available through public health care system. A national guideline for ART has been developed by National AIDS/STD Program, Government of Bangladesh and approved by the Government.

For those reason, we are creating awareness for policy makers, civil societies and mass peoples through media advocacy program.

Objectives: Raising mass awareness on universal access to provide care, support and treatment services for the people living with HIV/AIDS to address MDG-06 Combat HIV/AIDS, Malaria and other Diseases.

Methodology:
- Organize skill building training for the Health Reporters on HIV/AIDS related Care, Support and Treatment issues
- Organize interactive meetings with media peoples and PLWA organizations at national and grassroots level
- Develop HIV/AIDS related Care, Support and Treatment services issue based reporting for publish local & national newspapers/on-line/e-forums

Results:
1. 200 health reporters received skill building training on HIV/AIDS related Care, Support and Treatment issues
2. Raise voice of the PLWA community peoples with Journalists community through interactive meetings
3. Develop and published yearly minimum 200 reports/articles/story/features/editorials in fever of Universal Access to Care, Support and Treatment issues

Conclusion: HIV and AIDS program in Bangladesh is running more prevention approaches. But day to days HIV + peoples are increasing in Bangladeshi society. Care, Support and Treatment program should be come forward. So that, BMSF feels to create awareness on universal access is more important issues. This is why BMSF develop this program.

Keywords: Promote Universal Access issues

2. MARGINALIZED SEXUALITY: A STUDY ON SOCIO-CULTURAL SCENARIO OF MALE SEX WORKERS IN KATHMANDU

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Objectives: The main objective of the study was to collect and analyze data regarding knowledge, sexual behavior and preventive practices of male sex workers. Recent studies have shown that HIV prevalence in these groups is raising and also other STIs are very common. This study was carried out in one of the most populated city of Nepal, Kathmandu.

Methodology: As part of second generation surveillance, face-to-face in-depth interviews and testimonies using a structured questionnaire were filled from 150 male sex workers. Male sex workers were recruited through respondent driven sampling. Data were collected between March, April and May 2007.

Results: Although most male sex workers had heard of HIV and AIDS, correct knowledge of modes of transmission was lacking. Majority (59%) of male sex workers did not know that condoms gives protection against HIV transmission, only one-fourth of respondents used condoms during last anal sex with paying clients. One third of male sex workers used lubricant during last anal sex. Many did not obtain treatment for STDs in appropriate fashion, if at all.

Conclusion: Presently there is no program for male sex workers in Kathmandu. There is need for a comprehensive HIV programme that combines different services with behavior change and communication interventions, along with giving attention to the right to have access to health care in order to prevent the spread of HIV and fight the various stigma and discrimination attached to it.
3. HIV/AIDS INTERVENTION IN PAKISTAN (A Case Study of Pakistan)

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Introduction: Poverty is major development concerned in Pakistan and may be important facilitating factors in the further spread of HIV infection in the country because it could be reason to help vulnerability to HIV/AIDS. Pakistan various health issues recognize that certain segments of society bear a disproportionate burden of disease and injury, and face social, economic, or institutional barriers to accessing health care services. HIV care can be defined in broader terms as the collection, analysis and spreading of data, relevant to the anticipation or control of HIV. Information generated by a HIV observation system is crucial for health professionals and planners to improve their understanding of the HIV outbreak, path and monitor its growth and provide information on the usefulness of prevention and control measures.

Objectives: The Objective of this paper is to enhance awareness of policy makers and NGOs regarding HIV interference in Pakistan and will be benefited for future analysis and planning.

Methodology: After conducting situation analysis with respect to HIV/AIDS, I would like to find out the determinants and reasons for Vulnerability to HIV/AIDS in terms of following parameters:

- Poverty
- Gender Inequalities
- Blood transfusion
- Mobility and migration

Qualitative research techniques seem to be the most appropriate one for this study. The participatory approach is adopted for the evaluation of socio economic costs and running down of assets of peoples. Open-ended questionnaires were constructed to collect information. To collect further relevant information, interviews were conducted with other important stakeholders that included caregivers, and health professionals.

Keywords: HIV, Poverty, Awareness

4. SOCIO-CULTURAL REALITIES AND IMPORTANCE OF INTERVENTIONAL OF AIDS EDUCATION

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Introduction: There is no proper and specific STD/AIDS education in Kerala due to very high standards of education in the state, as compared to other states of India. But the disease is fast spreading in the state, mainly among the adolescents.

Objectives: To check if high standards of education in Kerala correspond with good knowledge about STD/AIDS and the impact on knowledge about AIDS by specific AIDS education.

Methodology: The study was done among 800 high school students in Kerala. We prepared a questionnaire containing 20 questions, the answers to which an adolescent belonging to that age group ought to know. We did pre and post-interventional assessment using the same questionnaire. We conducted 26 detailed intervention classes of AIDS -its general features, mode of transmission, clinical features, prevention etc each lasting for about 45 minutes. We had an interactive session, where students were given an opportunity to clear their doubts regarding the topic.

Results: The achievements that Kerala made in the educational front are seen reflected in the pre-interventional assessment, which stood at 45.1%. Pre-interventional study also pointed out that the awareness was least regarding clinical features & mode of transmission of the disease. Mean score after the intervention program was found to be 83.5%.

Conclusion: A society with high literacy rate and standards of education cannot expect to be well informed about AIDS. A grass root level specific AIDS education will bring the desired results of the interventional programs also that can make significant improvement in the knowledge of the community. This shows that all the countries are equally vulnerable to AIDS in the absence of specific AIDS/STD education.

Keywords: AIDS education, Adolescents, Interventional assessment
5. IMPACT OF COMMUNITY BASED CARE AND SUPPORT IN INCREASING COMMUNITY PARTICIPATION AND SOCIAL ACCEPTANCE OF HIV INFECTED PEOPLE TO IMPROVE QUALITY OF LIFE

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Introduction: The interests of people living with HIV are often ignored when it comes to the interests of the family and other members of the family. The efforts to reduce such problems of the people living with HIV require systematic documentation of facts relating to the factors underlying such problems and wider dissemination of the same. The study emphasizes that people disadvantaged by HIV across India gain a sustainable improved quality of life due to community based care and support interventions.

Objectives: The study has the following objective
✓ To know how community based care and support programme help improve the quality of life of people living with HIV/AIDS

Methodology: The case study method has been used for collection of data in the study.

Results: The community based care and support intervention has reduced poverty through generating employment opportunities and helping get employment to the people living with HIV. 75 per cent beneficiaries have increased independence in life through educational support. 80 per cent beneficiaries have started participating in family and community related decision-making process. 60 per cent beneficiaries reported that their social acceptance has increased.

Conclusion: The study revealed that the people living with HIV have started taking participation in the decision-making process and their quality of life has improved.

Key worlds: Community based care and support, quality of life, community participation

6. INTERNET USE AMONG NEPALESE YOUTHIS: IMPLICATIONS FOR HIV INTERVENTION AND PREVENTION

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Introduction: Internet tools, cell phones, and other information and communication technologies are being used by HIV-positive people on their own initiative. Little is known about the perceptions of HIV-positive people towards these technologies in NEPAL. The purpose of this paper is to report on perceptions towards use of information and communication technologies as a means to support antiretroviral medication adherence and HIV transmission risk reduction.

Objectives: To investigate Internet access, use and acceptability as a means for health promotion and health service delivery among HIV-positive youth; To decrease the risk of transmission; To check the compliance of antiretroviral medication among HIV-Positive youths.

Methodology: A community-based participatory approach was used to conduct a mixed methods research study. Twenty-five qualitative in-depth interviews were conducted with youth (ages 12-24) living with HIV in Pokhara, Nepal.

Results: Three main themes were identified with respect to the youthís use of and interest in the Internet as a health promotion strategy. These include:
1. Low rates of Internet use and access;
2. Issues around public and private terminals;
3. The rarity of health information seeking behavior in this group.

Conclusion: Health promotion interventions using information and communication technology tools among people living with HIV in resource-constrained settings may be acceptable and feasible, and can build on existing patterns of use.

Keywords: Youth, HIV, Internet, health promotion
7. ASSESSMENT OF ADHERENCE TO ART AMONG PATIENTS LIVING WITH AIDS/HIV IN FINOTESELAM HOSPITAL WEST GOJAM ZONE NORTH WEST ETHIOPIA

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Introduction: The primary goal of treatment with ART (antiretroviral therapy) is to prevent HIV related morbidity and mortality. Attaining a successive treatment needs strict adherence to a new ARV regimen. Still non adherence remains common among patients receiving antiretroviral therapy due to a number of factors. The objective of this research was to assess adherence rate and factors associated with adherence.

Objectives: To asses the adherence rate and factors associated with HIV/AIDS in the hospital.

Methodology: Patientsí self report and patientsí information sheets were used which was conducted in FINOTESELAM HOSPITAL WEST GOJAM ZONE NORTH WEST ETHIOPIA.

Results: Out of 153 respondents 65 (42.5%) were male and 88 (57.5%) were female. The majority of the respondents were in the range of 25-39 years. The mean adherence rate for male and female were 98.8% and 98.4% respectively. The overall adherence of the study population was 98.6%. Statistically significant difference was not observed in distribution of the PLWHA who missed the prescribed dose of ARV by age, educational status, use of stimulants and local drinks, monthly income, occupational status, degree of ART, duration of ART, adverse effects faced, greatest source of support, address and regimen type. But Sex, living condition, family disclosure and other medications in addition to ARVs were significantly associated with adherence (p< 0.0032, p< 0.0001,p< 0.0371 and p< 0.001) respectively.

Conclusion: High level of adherence was demonstrated by PLWHA on ART in the designated area. These socio demographic characteristics except some (sex) use of stimulants and local drinks degree of ART service satisfaction, duration of ART, faced adverse effects, greatest source of support and regimen type were not the predictors of adherence. While sex, non disclosure other medication in addition to ARV and living alone were predictors of adherence. Of the predictors non disclosure and living condition were poor predictors and other medication practice were good predictors of adherence. Therefore community based strategy for ART adherences are recommended in order to keep this high level of adherence.

Keywords: ART, PLWHA, ADHERENCE, ETHIOPIA

8. HIV DISCLOSURE AMONG THE WIVES OF HIV INFECTED MEN IN SOUTH INDIA

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Introduction: Disclosure is an important interpersonal phenomenon that has received considerable research attention in HIV and disclosing ones HIV status is an essential part of the behaviour modification required to reduce the incidence of HIV. However, disclosure about HIV is restricted by fear of stigma that may result in rejection by family and friends. Yet secrets and lies within families have ramifications for dynamics and interactions including marital conflicts, domestic violence, availability of social support and planning about future etc;

Objectives: This study aimed to examine the impact of HIV related disclosure on the lives of 201 women who were the wives of HIV infected women in South India.

Methodology: Both qualitative and quantitative methods were employed. A total of 201 married women who accompanied their spouses were selected from 3 hospitals at Chennai and Vellore, Tamil Nadu, India. In-depth interviews were conducted in total privacy and collected data was analyzed by SPSS version 15.

Results: The data shows 96% of women and 72% of their spouses belonged to the age group of 20 - 40 years. One fourth of the study population was married within five years and 69% of 201 women were seropositive. Thirty-eight children out of 179 total children were seropositive and 22 children died of AIDS. Few children (11%) were disclosed about their parent/parents HIV status. Sixty-two percent of women reported a decreased desire for sex to the point of celibacy. The difference between disclosure and non-disclosure groups in terms of getting help and social support was highly significant.

Conclusion: Effective counseling services, social support by NGOs and motivated joint family systems will reduce considerably the impact of HIV disclosure among PLHAs.

Keywords: Impact of HIV Disclosure, wives of HIV infected persons, South India
9. COMPLEX RESPONSES OF INDIAN FAMILIES TOWARDS HIV/AIDS: INSIGHTS FROM RURAL MAHARASHTRA

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Introduction: The third phase of Indiaís National AIDS Control Programme (NACP) places a particular emphasis on family- and community-centred responses to HIV/AIDS. Families are fundamental social units in Indian society, yet little is known about how families affected by HIV/AIDS are responding to the impact of the disease.

Objective: To understand how rural Indian families respond to HIV epidemic.

Methodology: A qualitative study undertaken in rural Maharashtra, India in 2007 aimed at understanding family membersí perceptions and experiences of care- giving to PLWHA. Nineteen case studies were conducted. Case studies consisted of in-depth interviews with PLWHA (n=19) and their care providers (n=31).

Results: Respondents were from traditional agrarian and kinship oriented society. They all were agricultural labourers, living in a joint or extended families. Eighteen out of nineteen PLWHA received care and support from their family. Majority of them reported that they had at least one family member as key care provider. Only one PLWHA experienced extreme negligence by his wife and children. There was variation in the distribution of responsibilities of care provision within each family. Some families were self-sufficient. Others were dependent on distant relatives. While offering care, families underwent changes in terms of their constitution, functions and relationships of members. Mere disclosure of diagnosis shattered some families; however, other families could confidently face recurrent illness episodes due to HIV. Families revealed different strengths to handle the complexity of HIV/AIDS. These included, for example, a supportive HIV negative husband in one case, and an elderly father acting as a counselor, explaining condom use to his daughter in another case.

Conclusion: Families have their own strategies to accommodate HIV and maintain integrity of the household. It is crucial to assess the unique responses of the family in particular cultural contexts before deciding on strategies for family counselling at local levels.

Keywords: HIV/AIDS, family responses, care and support

10. PREVALENCE OF OPPORTUNISTIC INFECTION (OI) AMONG HUMAN IMMUNODEFICIENCY VIRUS (HIV) SEROPOSITIVE PATIENTS IN A TERTIARY CARE HOSPITAL

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Introduction: Human Immunodeficiency Virus (HIV)/ Acquired Immunodeficiency Syndrome (AIDS) claimed more than 22 million deaths in the past two decades. About 10,000-15,000 Nepalese are expected to die of AIDS related deaths every year in the absence of effective treatment and care. Major cause of mortality and morbidity in HIV infected people is Opportunistic infection (OI). Type of pathogen(s) responsible for OI varies from region to region. So, it is worth studying and updating information about OI among HIV seropositive patients in our region.

Objectives: To find out OI among HIV seropositive patients visiting Manipal Teaching Hospital (MTH), Pokhara, Nepal from March 2004 to September 2005.

Methodology: As per the symptoms and clinical presentation various samples as sputum, cerebrospinal fluid (CSF), stool, oesophageal brushing, lymph node aspirate, blood and urine were collected for the diagnosis of OI among HIV seropositive patients. The samples were processed according to the different pathogens and OI suspected. Necessary precautions were taken while collecting and processing the samples.

Results: Among 54 HIV seropositive cases, Tuberculosis (30%) was found to be most common OI followed by candidiasis (14%). Pulmonary tuberculosis (21.14%) was more common than extra pulmonary tuberculosis (8.92%). Oral candidiasis (8.92%) was more common than oesophageal candidiasis (5.35%).

Conclusion: Present study showed that pulmonary tuberculosis (TB) is the leading OI among HIV seropositive patients. So timely detection and care for TB/HIV co infected persons is must. Strict adherence to screening of HIV among TB patients should be practiced.

Keywords: HIV, AIDS, OI, TB
11. IMPLICATION OF CONDOM USE AMONG INJECTING DRUG USERS IN RELATION TO THEIR HIV SEROSTATUS IN EASTERN NEPAL

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Introduction: Injecting drug users (IDUs) are at increased risk of acquiring and transmitting HIV infection primarily because of unsafe injection practices and high-risk sex behaviours. Nepalis main focus is basically on reducing unsafe injection practices that seems to underestimate the role of condom use for preventing HIV.

Objectives: To explore the condom using practice of IDUs in relation to their HIV serostatus and suggest its implication for preventing HIV.

Methodology: Cross-sectional study design was applied based on interview using a semi-structured questionnaire with a random sample of 100 Injecting drug users (35 HIV positive and 65 HIV negative) selected from recorded 1000 IDUs of Dharan, an urban municipality of eastern Nepal. Data were analyzed by using univariate and multivariate analysis applying logistic regression and Cox proportional hazard model through SPSS 11.0 and Stata 9.0.

Results: Out of total, 46 HIV negative IDUs and 32 HIV negative IDUs had sexual contact within the previous week. Of these, 56.5 percent HIV negative IDUs and 9.4 percent HIV positive IDUs had used condom. Though injection sharing was independently associated with overall risk of HIV, only the use of condom during the most recent sexual intercourse had significant protective association (Adjusted Odds Ratio = 0.070, 95% CI = 0.006 to 0.837, P=0.036) while controlling the effect of age, marital status and experience of sexual contact. Similarly, use of condom during the most recent sexual intercourse was the single significant univariate protective predictor of instantaneous risk of HIV (Hazard Ratio = 0.221, P=0.014, 95% CI=0.066 to 0.738) out of sexual practices, but no instantaneous association was observed with injection sharing.

Conclusion: Policy and programs should focus on promotion of condom use among Injecting Drug Users for preventing HIV transmission effectively among and through them.

Keywords: Condom, Injecting Drug Users, HIV, Nepal

12. HIV RELATED KNOWLEDGE AND BEHAVIOR OF INJECTING DRUG USERS IN EASTERN NEPAL

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Introduction: It is tempting to say that Injecting Drug users (IDUs) practice unsafe injecting and sexual behavior because they are poorly informed about the risk of contracting HIV. However, only knowledge may not solely determine the behavior.

Objectives: To explore HIV Related Knowledge and Behavior of Injecting Drug Users in Eastern Nepal and identify any gaps between HIV related knowledge and behavior of IDUs.

Methodology: Cross-sectional study design was applied based on interview using a semi-structured questionnaire with a random sample of 100 Injecting drug users (35 HIV positive and 65 HIV negative) selected from recorded 1000 IDUs of Dharan, an urban municipality of eastern Nepal. Data were analyzed by using univariate and multivariate analysis applying logistic regression and Cox proportional hazard model through SPSS 11.0 and Stata 9.0.

Results: Majority of HIV positive IDUs (88.60%) and HIV negative IDUs (86.20%) had knowledge on all of the four major routes of transmission of HIV/AIDS (P=1.00). Remarkably higher proportion of HIV positive IDUs (91.40%) reused syringe or needles, for their injecting purpose during last week, which had already been used by somebody else, as compared to that of 67.70 percent of HIV negative IDUs, which was statistically significant (P = 0.016). Out of those having sexual contact in past 1 week, significantly higher proportion (90.60%) of HIV positive (n=32) IDUs didnít use condom during their last sexual intercourse as compared to only 43.50 percent of HIV negative IDUs (n=46) those didnít use condom (P<0.001).

Conclusion: Prominent gaps exist in between HIV related knowledge and behavior of IDUs in Nepal. It seems that HIV has made IDUs of Nepal adopting more risky injecting and sexual practices.

Keywords: Knowledge, Behavior, Injecting Drug Users, Nepal
13. KNOWLEDGE ON ACCESS TO HIV VOLUNTARY COUNSELING AND TESTING AMONG INJECTING DRUG USERS IN EASTERN NEPAL

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Introduction: Despite the availability of awareness programs and HIV voluntary counseling and testing (VCT) services, the utilization of VCT services is low in Nepal. People having high risk behavior, such as injecting drug users (IDUs), have high prevalence of HIV. It seems that such services are not targeting such groups when they are HIV negative. This study aims to compare the knowledge of HIV negative and HIV positive IDUs on access to VCT in their community.

Objectives: To explore HIV Related Knowledge and Behavior of Injecting Drug Users in Eastern Nepal and identify any gaps between HIV related knowledge and behavior of IDUs.

Methodology: Cross-sectional study design was applied based on interview using a semi-structured questionnaire with a random sample of 100 injecting drug users (35 HIV positive and 65 HIV negative) selected from recorded 1000 IDUs of Dharan, an urban municipality of eastern Nepal. Data were analyzed by using univariate and multivariate analysis applying logistic regression and Cox proportional hazard model through SPSS 11.0 and Stata 9.0.

Results: The entire HIV positive (n=35) and HIV negative IDUs (n=65) IDUs heard of HIV Voluntary Counseling and Testing. Out of these, 30 (85.70%) of HIV positive IDUs had the knowledge of the availability of the VCT service in their community as compared to only 28 (43.10%) of HIV negative IDUs. The result shows that the awareness of HIV positive IDUs on access to VCT service in the community was significantly higher than that of HIV negative IDUs (P<0.001).

Conclusion: For reducing the prevalence of HIV among people having high risk behavior such as IDUs, there is further need of focus on increasing the access of HIV related services including VCT when they are HIV negative.

Keywords: Knowledge, Voluntary Counseling and Testing, Injecting Drug Users, Nepal

14. SIX YEAR TRENDS OF SEROPREVALENCE OF HIV AMONG POPULATION ATTENDING ICTCs OF STATE Uttarakhand

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Introduction: Human immunodeficiency Virus (HIV) is a lentivirus that belongs to the retroviruses group may cause HIV infection / AIDS. Acquired Immunodeficiency Syndrome (AIDS) has emerged as one of the most serious public health problem in the country after reporting of the first case in 1986. According to UNAIDS/WHO estimates, there are 38.6 million people living with HIV/AIDS. Globally India is second leader in the world as far as number of HIV positive cases (2.5 million) are concerned. ICTCs are key entry points for a wide range of interventions in HIV prevention and care.

Objectives: To know the trends of HIV prevalence over 6 years among people attending ICTCs.

Methodology: A cross-sectional study was conducted over a period of 6 years (2002-2007) among all the people attending 20 ICTC centers in 13 districts of Uttarakhand. The patients were counseled and those who belonged to high-risk groups, their blood samples were collected. The samples were subjected to ELISA for HIV and diagnosis was confirmed. The data was collected and analyzed using suitable statistical package.

Results: In the year 2002 there were only two VCTCs in the state, which have increased to 20 by December 2007. Over six years the number of patients counseled have increased each year from only 1663 in year 2002 to 53,881 in year 2007. Similarly, patients whose blood samples were tested have also increased from just 243 in 2002 to 46,752 in 2007. The seropositivity was found to be highest i.e., 9.5%in year 2002, and has decreased progressively to 1.08% in year 2007.

Conclusion: Awareness level is high among the population of Uttarakhand (69%) due to which the people attending the ICTCs have increased considerably. Still there is an urgent need to strengthen the sentinel surveillance sites for HIV/AIDS as the need of the hour is to identify the missing cases.

Keywords: HIV, AIDS, ICTC, Seropositivity
15. EXPLORING THERMOTHERAPY AS A TREATMENT MODALITY FOR HIV

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Introduction: The HIV epidemic is a major challenge worldwide that threatens the future of mankind. The UNAIDS/WHO Report on AIDS Epidemic Update reveals the estimated number of people living with HIV to be about 33.2 million with 2.5 million newly infected and 2.1 million AIDS deaths in 2007. Despite significant achievements in the development of antiretroviral drugs, there still does not seem to be an effective long-lasting treatment for chronic HIV. The cumulative toxicity of current antiretroviral agents, the potential for unforeseen long term complications, the difficulty in adhering to lifelong therapy, the inevitable consequence of antiretroviral resistance, the fact that replication-competent pro-viral DNA is harbored in latently infected CD4 lymphocytes and macrophages, necessitates alternative treatment strategies. Thermotherapy has shown encouraging results in trials conducted by noted scientists and it is worthwhile to carry out such a trial, which will be the first ever of its kind in India, where HIV/AIDS is posing a challenge and threat to the public health system.

Objectives: To highlight the mechanism of action of thermotherapy and its role in HIV and to present the findings of the research undertaken in this field.

Methodology: The initial clinical trial covered a group of 20 HIV-infected patients aged 17-29 with asymptomatic disease course and progressive viral load. None of them had been previously treated with conventional anti-retroviral medications. Thermotherapy was given by increasing the body core temperature to between 43 and 43.7°C that is between 109.5 and 110.6°F, where selective destruction of pathological proteins proceeds at a substantially accelerated rate without raising the set-point at thermal centre of hypothalamus and also without compromising the safety of the patients. All patients received 4 thermotherapy sessions. All of them withstood the treatment without any clinically noticeable complication.

Results: 12 months after the treatment was administered, the viral load in all patients decreased by up to 50 times, down to less than 2% of their initial viral load.

Conclusion: While having made substantial strides in recent years, modern antiretroviral approaches continue to face a number of problems (fast progression of viral load after interruption of highly active antiretroviral therapy (HAART); high level of HIV mutation - up to 10 mutations/genome per one replication cycle; and serious side effects of antiretroviral chemotherapy, in addition to relative high cost). Clearly there is need for alternative ways to control the HIV progression. In this context thermal treatment methods and their further development show very high promise. Thermotherapy may prove a unique modality for cure of HIV.

Keywords: Thermotherapy, HIV, antiretroviral therapy, viral load

16. AN ANTHROPOLOGICAL STUDY OF TRANSGENDER PERSONS AT HIGHER RISK FOR HIV/AIDS IN ANDHRA PRADESH

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Background: HIV prevalence and risk behaviors are high among certain sub-groups of the transgender population in Andhra Pradesh.

Objective: This study is to study the socio-economic, sexual health and behavioural patterns of high risk population of transgender

Methods: The study explores possible sources for these high rates of HIV infection. Risk taking behaviour was assessed using a self administered questionnaire, mostly closed-ended survey and focus groups with the transgender with the researcher. The respondents were selected through the snowball sampling technique in Andhra Pradesh state.

Results: Of the 200, 32 percent of them were HIV positive (27 percent of them were aware of status), 34 per cent of them were HIV negative and the rest of them had never been tested for HIV. Majority of the respondents were Hindus. The median age was 32 years, 59 percent of the transgender reported sex for money.† 71 percent of them reporting high risk sexual behaviour with a multiple sex partner and rest of them are likely to be the casual partners. 35 percent of them had reported sex with 5 or more sexual partners in the preceding one month, with more than half (54 percent) of them reporting more than 10 sexual partners. 53 percent of them assumed that their last partner was HIV negative. Unprotected anal sex and oral sex was reported by 61 per cent and 87 per cent respectively in the past one month.† This survey highlights ongoing transmission risks of both STIs and HIV, with 47 percent of transgender not always using condoms for penetrative sex and 53 per cent are practice sage sex (always using condoms for penetrative anal and oral sex). Condom use was inconsistent in 91 per cent receptive and 93 percent insertive anal intercourse with casual partners. Their socio-economic status of the respondents was very poor. Most of them are unemployed due to the stigma and discrimination in the society they like sex as earning service. High level of recreational drugs use and habit of drinking alcohol occur. However, with regard to mental health, transgender persons were more to have experienced depression and more likely to have considered or attempted suicide. Finally, transgender
persons reported the lowest levels of support from family and friends. Thus, in our sample, transgender persons appear to be at lower risk for HIV but at higher risk for mental health concerns.

Conclusions: The study shows that the high rates of partner change unprotected anal intercourse and STI among this group of HIV. Transgender is a cause of concern. The study shows the potentially high risk of onward transmission of HIV in Transgender with STI. The follow-up rates are unclear and need to be addressed. The challenge is to educate both Transgender and health care professionals as to sexual health issues especially the risk associated with casual oral sex by transgender. The study might reflect the impact of socio-economic, behavioural patterns and social stigma on transgender and have implications for the design of future HIV/STI prevention efforts more generally will be discussed. The results indicate a targeted multifaceted outreach programmes to include community-based venues and Transgender are necessary to combat further spread of HIV and prevention strategies that target the transgender populations and need for further research.

17. PROFILE AND DETERMINANTS OF HIV INFECTION AMONG SEROPOSITIVE CLIENTS DIAGNOSED AT INTEGRATED COUNSELING AND TESTING CENTRES (ICTCS) IN TAMILNADU

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Introduction: In Tamilnadu ICTCs were established in 2004 to promote access to HIV counseling and testing.

Objective: To assess the HIV sero-status of clients attending integrated counseling and testing centres (ICTCs) in Tamilnadu, south India (excluding antenatal women and children) and to study its association with socio demographic and behavioral risk factors.

Methods: In a prospective observational study, we interviewed clients attending 170 ICTCs from six districts of Tamilnadu during 2007 utilizing a standard pretest assessment questionnaire. All the clients were tested for HIV with rapid test kits. Multiple logistic regression analysis was used to identify determinants of HIV infection.

Results: Of 18329 clients counseled, 17958 (98%) were tested for HIV and 732 (4.1%; range 2.6-6.2%) were tested positive for HIV. Median age of clients was 30 years, 89% had never used condoms in their lives and 2% gave history of having received blood transfusion. In multivariate analysis HIV seropositivity was associated with HIV in the family AOR (Adjusted Odds Ratio, \( p<0.01 \)) 11.6, history of having sex with commercial sex workers AOR 2.9, age eî31 years AOR 2.8; being married (AOR 2.5), previously tested for HIV (AOR 1.9), illiteracy (AOR 1.7), unemployment (AOR 1.5), and alcoholism (AOR 1.5). Higher sero prevalence among those having sex with a sex workers was significant \( (p<0.01) \).

Conclusion: ICTCs have been encouraging in targeting the vulnerable age group and individuals who are expected to be at risk. More advice and preventive strategies need to be evolved keeping in mind factor such as age, history of HIV in the family, married and previously tested couples.

18. LEGAL REMEDIES IN LAW AND HIV/AIDS

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Introduction: Constitution is ito secure to all -citizens justice, social, economic and political, liberty of thought, expression, belief, faith and worship- equality of status and of opportunity. i HIV/ AIDS has entered in third decade and walked in each and every socioeconomic class. Persons with HIV/ AIDS are facing a lot of discrimination and grievous social consequences. There is a need for study of remedies to persons with HIV/AIDS in Indian Constitution under different sections.

Objectives: Collecting information on social consequences and their legal remedies in law for HIV/ AIDS and generating awareness on the urgency of tackling social consequences of HIV/ AIDS.

Methodology: Study Design: -Review Article - Technique: Thorough Case Studies through AIR (All India Reporters from supreme court and different High Courts)

Results: Case Study 1 - AIR 1999, SUPREME COURT, Civil appeal No.4641 of 1998 *D/-21-91998, Mr iki Appellant v. Hospital Z Respondent. In this leading case of a HIV+ patient Honible Supreme Court said that under constitution of India Article 21 Right to life includes right to privacy and disclosure
by hospital that the patient who was to get married has tested HIV+ is not violation of patients right to privacy, and under Indian Medical Council Act (102 of 1956) Disclosure by Doctor of this HIV+ve status no violation of duty of secrecy.

Case Study 2 - Maharashtra State Consumer, Dispute Redressal Commission Bombay SUNITA VASANT HEGANAWAR & ORS. The complainants versus MIRAJ MEDICAL CENTER- Opposite Party, Complaint No. 323 of 1992-Decided on 253.94. Consumer Protection Act 1986-section 2 (1) (d) (11) Complaint- Medical services the Blood- Complaint operated upon in hospital of opposite party blood administered by Blood contaminated with AIDS Virus - Complaint her husband, daughter get infected with Aids virus - Compensation of Rs. 10 Lakh claimed for deficient of services - whether the complainant is consumer under the ACT? no. as opposite party proves that no consideration was paid by complainant to the opposite party for medical treatment and as result complaint dismissed. In the case study though complaint is not a consumer but if complainant aware of other remedies or have legal aid and appealed in civil court for compensation, can get compensation as this act come under definition of tort or offence in IPC.

Conclusion: There is need of awareness generation and free legal aid for persons with HIV/AIDS on its social consequences through legal clinics at least up to the level of ART centers and CCC with the help of NGOs.

19. MOLLASCUM CONTAGIOSUM AS A PRESENTATION OF AIDS

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A forty eight year old man who come back to Dhaka after serving three and half years in Malaysia was admitted in ENT Department of Holy Family Red Crescent Medical College Hospital, Dhaka Bangladesh with dysphagia for one and half month, hoarseness of voice and generalized skin lesions. He had a history of rectal bleeding, fever and gradual loss of weight. By videolaryngoscopy pharynx showed multiple papules in oral, pharyngeal and laryngeal mucosa. On dermatological examination showed discrete and confluent umbilicated papules on the face, neck, chest, trunk and extremities. Some lesions were oval, hemispherical and pearly white in color especially on forehead a large molluscus have a central keratotic plaque. Immunological findings were IgG positive against herpes virus type I & II, but IgM were negative. HIV test for type I & II were positive. CD4+ cells counts were 150/ microlitre. Our diagnosis was molluscum contagiosum as a presentation of AIDS.

20. KNOWLEDGE, ATTITUDE AND UNIVERSAL PRACTICES TOWARDS HIV/AIDS AMONG MEDICAL STUDENTS QUETTA, PAKISTAN

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Introduction: Hi I am Dr. Dawood Riaz. Last here I have completed my post graduation from Mahidol University Bangkok, and Just recently joined WHO as a PHC officer. I am a young public health specialist. The aim of submission of this abstract is to get more knowledge regarding health issues to my others country colleagues and use in my country.

Objectives: To evaluate the level of knowledge, attitude and universal precaution practices towards HIV/AIDS among medical students in Quetta District and to determine the correlations of general characteristic factors and knowledge, attitude factors and Universal Precaution practices towards HIV/AIDS among medical students in Quetta District.

Methodology: descriptive cross-sectional study design.

Results: Medical students are at high risk of being exposed to blood-born diseases like HIV infection. This cross-sectional study aimed to assess the knowledge, attitude and universal precaution practices towards HIV/AIDS among medical students in Bolan Medical College Quetta, Pakistan. Two hundred and thirty medical students from year 3rd to 5th were invited to fill out a self-administered questionnaire.

A total of 203 medical students consented to participate in this study, giving a response rate of 88.2%. Among them 32.5% had good universal precaution practices, 54.7% had moderate and 12.8% had poor universal precaution practices towards HIV/AIDS. Practices regarding universal precaution practices among medical students mostly at moderate level but some students had risky behavior, such as recap, bent or broke needles by hand after used to patients and disposed sharp instruments with other clinical waste. Moreover, the knowledge and attitude level of the medical students were found moderate towards HIV/AIDS and universal precaution practices. Statistical analysis indicated that there was significant association between knowledge and universal precaution practices (p<0.002) and attitude and universal precaution practices (p=0.023). Medical students still had limited knowledge regarding safety needle handling methods and their correct disposal. It was observed that medical students’ knowledge on the need for smoke-free health care areas was poor despite many students having experience of working with patients who use tobacco. Medical students had limited knowledge of the serious and potential short- and long-term consequences of smoking, as well as the addictive nature of smoking. Medical students frequently reported that they did not receive any formal training related to smoking cessation, nor did they have access to evidence-based smoking cessation interventions. Medical students revealed some knowledge of the various pharmacological treatments available for smoking cessation, but few knew that smoking cessation clinics were available to them and their patients. Medical students expressed fear of being stigmatized by patients that used tobacco products during their medical practice.

Conclusions: Medical students have limited knowledge and poor attitude toward smoking. There is a need for further education and training in smoking cessation among medical students. Medical students should be encouraged to participate in smoking cessation programs to improve their knowledge and attitude.
knowledge about mode of transmission of HIV because of lack of understanding, and had no experience on it.

Knowledge on HIV/AIDS and universal precaution should be improved and implemented in the medical college curriculum, it should emphasize on misconception, lack of understanding and supporting and promoting the students to adopt positive attitude towards universal precaution practices. Facilities for universal precaution practice should be provided in regular basis.

Keywords: Universal Precaution Practices, HIV/AIDS, Medical Students, Pakistan

21. PULMONARY INFECTION IN HIV/AIDS PATIENTS WITH OR WITH OUT UNDERGOING ANTIRETROVIRAL THERAPY OF KANCHANPUR

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Introduction: Pulmonary infections are the most common opportunistic infections in HIV/AIDS patients and regular laboratory investigation of such infections provides the opportunity for initiating HIV care and support services to needy individuals.

Objectives: To find the prevalence of common pulmonary infections in HIV/AIDS patients of Kanchanpur.

Methodology: A cross-sectional analytical study was carried out by department of Microbiology, Siddhanath Science Campus, Mahendranagar, Kanchanpur between June 2007 and March 2008 in 60 HIV infected patients visiting Mahakali Zonal hospital and HIV related NGOs located in Mahendranagar. After taking informed consent, a pre-structured questionnaire was filled and sputum specimen was collected for detection of M. tuberculosis (by AFB staining and culture in Ogawa medium), Streptococcus pneumoniae (by direct microscopy, culture and optochin sensitivity test) and Cryptococcus neoformans (by India ink preparation) as per standard Microbiological methods.

Results: Among 60 HIV patients, 46 (76.7%) were females of which 65.2% were widow, and only 14 (23.3%) were males. Majority of them were in the age group 30-40 (41.7%). Over 76.1% of the females were illiterate. Streptococcus pneumoniae was found to be the major pulmonary pathogen (38.3%) followed by Cryptococcus neoformans (20%). Tubercle bacilli was detected in 9 patients (15%) of which 7 (77.7%) were smear negative type. These Pulmonary infections are less common in those patients with ART in comparison to Non ART patients but this is statistically insignificant (p>0.05). Similarly these diseases are more likely to occur in those patients with CD4 count less than 200 but this is also statistically insignificant (p>0.05).

Conclusion: Generalized HIV epidemic in Kanchanpur (far west) caused the high prevalence of Pneumonia, cryptococcosis and TB irrespective of their CD4 and ARV status

22. HIV AWARENESS OF INJECTING DRUG USERS OF DHAKA

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Introduction: Injecting drug use is spreading rapidly in Bangladesh which is the prime contributor to the overall HIV epidemic in a country (Asaduzzaman, 2005. p. 6). Although Bangladesh is experiencing lower rate of HIV prevalence risk behaviors like needle sharing and unprotected sex among IDUs (injecting drug users) commonly exist here. IDUs tend to buy or sell sex which facilitate to build up a critical mass of infections within needle sharing and sexual networks, from where HIV can be spread across the wider society (Alam, 2007. p. 3).

Objectives: The objective of the study is to investigate the current knowledge and awareness of IDUs of Dhaka about the risk of HIV infection.

Methodology: This is a cross-sectional descriptive type of study applying quantitative approach among 60 IDUs from three drop-in-centers in Dhaka, the capital of Bangladesh from June to August of 2007. Data was collected by interviewing participants using structured questions. Descriptive statistics was used to analyze data by producing frequency table and cross-tabulation between variables.

Results: Among the 60 respondents 43(71.7%) were male and 17(28.3%) respondents female. Only 21 (35%) IDUs had secondary qualification or more, of which all were male. 58(96.7%) IDUs heard about HIV/AIDS. 55(91.7%) IDUs knew that unprotected sex is a cause of transmission of HIV. 52(86.7%) IDUs mentioned about needle sharing and 30(50%) IDUs told about blood transfusion. 57(88.3%) IDUs identified contaminated needle as polluted one. 35(58.4%) IDUs share needle during injecting drug of which 31(51.7%) admitted that
23. TREATMENT CARE AND SUPPORT FOR PEOPLE LIVING WITH HIV/AIDS IN THE WESTERN REGION OF NEPAL

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**Introduction:** Save The Life Nepal (STLN) was established by ex-drug users and people living with HIV/AIDS. STLN is not only aiming to work in harness productive, capacity but also to draw out capacity and knowledge to prevention, care, treatment and support.

**Objective:** STLN Region has a major objectives to assist every PLHA and their family in improving their quality of life so that they can live a more healthy and productive life.

**Methodology:** 1. Providing Basic HIV/AIDS Training and others tools related to the issue for the capacity enhancement of PLHAs. 2. Conduct symposiums/forums in different areas where the most vulnerable groups are located. 3. Building and defining networks among HIV/AIDS organizations. 4. Increasing greater involvement of PLHAs at all levels of decision making process and in policy making.

**Results:** PLHAs having a common ground to discuss and present their issues and demands and creates an opportunity to enable them to have better exposure. They are coming out in public due to enabling environment provide. This will make and impact in reducing newer infections.

**Conclusion:** Though the number of ART centers has increased in India which in turn has increased the number of PLHAs registered and on ART. But as evident from baseline positive ways to live their lives. A review and upgrade of the skills of PLHAs allows them to assume social responsibilities for providing care, treatment and support and to develop close network for increasing involvement and ownership.

24. ARE PERSONS LIVING WITH HIV TIMELY ACCESSING ART SERVICES IN INDIA?

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**Introduction:** CD4+ T-cell level is one of the important criteria for categorizing HIV-related clinical conditions to determine initiation of ARV Therapy. The present study is undertaken to analyze baseline CD4 count at which PLHA were getting them registered for ART in India. It also examines the profile of the PLHA with baseline CD4 count over a period of time.

**Objectives:** To study the baseline CD4 count and profile of PLHA attending ART Centres in India.

**Methodology:** Data from Computerized Management Information System has been analyzed for the last three years (April 2005-March 2006, April 2006-March 2007 and April 2007-March 2008). Details of 116225 registered PLHAs at ART centers were examined for the study.

**Results:** Analysis revealed that more than 70 percent of PLHA are registered when their baseline CD4 count is less than 200 cells/mm³ and thus may be symptomatic. There is no significant change in the proportion of PLHA by CD4 categories in the last three years. This reveals that registration at early stage of infection is still rare. Result shows that significant decline in the proportion of PLHA has been observed in the age group of 21-30 years, literate and employed since 2005-06 to 2007-08. The proportion of PLHA referred by Counseling and Testing Centres has increased about 8-9 percent from 2005-06 (62.6 percent) to 2007-08 (71.3 percent). Hetero-sexual transmission, followed by Mother to Child transmission has been reported as two major modes of HIV transmission by PLHA registered at ART centers in the last three years.

**Conclusion:** Recent report indicates that there are approximately 64,000 PLHAs and over 4,000 reported AIDS cases. In absence of effective interventions, it is estimated that HIV prevalence could increase to 1-2% within the 15-49 old population and that AIDS could become leading cause of death in Nepal within the next decade. Therefore, Save The Life Nepal Region has introduced this program, which will help people in western region to increase empowerment and create
CD4 profile the program is still far behind to achieve the goal of early detection of PLHA.

Keywords: HIV/AIDS, ART, CD4 Count

25. A STUDY OF CARDIAC MANIFESTATIONS OF HIV INFECTION AND CORRELATION WITH STAGE OF INFECTION

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Introduction: Cardiovascular manifestations of HIV infection have not attracted much attention. This is partly because the clinical picture of HIV infection is still dominated by opportunistic infections and malignancies. Patients with HIV infection are known to develop multiple pulmonary opportunistic infections, leading to problems of differential clinical diagnosis with cardiovascular disease.

Objectives: To study the cardiac manifestations in HIV infection and to correlate with clinical & immunological stage of HIV infection.

Methodology: The study included 52 HIV positive patients (>18 yrs) presented to OPD & in-patient department of Osmania general hospital from January 2007 to March 2008. All were subjected to detailed history and examination with special reference to cardiovascular system. Patients were investigated routinely and for cardiac involvement with electrocardiogram, chest x-ray PA view and 2D ECHO.

Results: Among 52 patients, 36% had cardiac involvement. The abnormal clinical cardiovascular findings in the study are tachycardia in 24(45%) patients and only 6(11.5%) patients had signs of congestive heart failure. Most common abnormality on ECG is sinus tachycardia -51.9%. X-ray chest is less sensitive in detecting cardiac abnormalities but provides indirect evidence of possible aetiology. 2D Echo is most sensitive investigative modality. Most common abnormalities are pericardial effusion in 12(22.8%) patients, followed by dilated cardiomyopathy in 7 (13.4%) patients. 83% of pericardial effusions are mild- moderate and Asymptomatic. Cardiac abnormalities occurred in all stages of the HIV disease spectrum but a higher frequency was observed in patients with CD4 counts <200/cumm. Out of 19 patients with cardiac involvement 11(57%) had CD4 count <200 and 9 of 19(47.3%) patients were in clinical category C. None of the study population had evidence of infective endocarditis. With the improving treatment of opportunistic infections and the unabating prevalence of HIV infection in India, clinicians should be aware of these abnormalities to ensure appropriate, comprehensive, and rational patient care.

Key Words: Cardiac Manifestations in HIV/AIDS

26. AN OVERVIEW OF THE HIV/AIDS TREATMENT AND CARE CENTRES IN PAKISTAN

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Introduction: In Pakistan prevalence of HIV in the general population is relatively low (0.1%) however, it is considered a concentrated epidemic in high-risk groups.

Objectives: To presents a holistic picture of HIV/AIDS cases and the role of HIV/AIDS Treatment and Care Centres in Pakistan, including access and provision of quality care support and Antiretroviral Therapy (ART) to all People living with HIV and AIDS.

Methodology: Regular monthly data reports were collected from all existing HIV/AIDS Treatments and Care Centres in Pakistan.

Results: The number of HIV positive people registered at the HIV Treatment and Care Centres is increasing on a monthly basis. The number of HIV positive people registered increased from 855 in March 2007 to 1537 by 30th June 2008. Patients on ART increased also from 361 to 695 during the same period.

Conclusion: There is an immense need to develop systematic processes and strategies for smooth facilitation of treatment to people living with HIV and AIDS in Pakistan. These include; defining a clear referral chain from time of a positive HIV test result to enrolment into a HIV Treatment and Care Centre, development of a systematic procurement of antiretroviral
medicines as well as monitoring and evaluation of treatment sites.

Keywords: HIV, Treatment Centres, ART, Pakistan

27. PSYCHOSOCIAL SUPPORT FOR HIV INFECTED AND AFFECTED CHILDREN IN RURAL INDIA

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Introduction: Worldwide, 13.4 million children have become orphans due to HIV. HIV infected affected childrens basic needs are potentially in jeopardy when their parents become ill and eventually die. RIDES Agape Home is the only AIDS orphanage in Ananthapur district, Andhra Pradesh state, South India.

Objective: To improve the quality of life of the HIV infected and affected children and efforts t reduce stigma and discrimination towards themselves and their families.

Methodology: Qualitative analysis of 108 HIV infected and affected children those who are in RIDES Agape home are enrolled. Parameters of clinical care, including antiretroviral therapy (ART), nutrition, education and income generating activities, ART for a childís parents were analyzed.

Results: Among 108 Children, 52.75% (51) are 10 ñ 14 years, 34.25% (37) are five to ten years and 13% (14) are below 5 years. Sex: 54.6% (59) are males and 45.4% (49) female. Among them, 11% (12) are HIV infected children; 75% (nine) are male and 25 % (three) are female. All infected children lost their fathers due to full blown of AIDS and their mothers are under ART. All children are going to school except two boys who dropped out from school before five years and now they are undergoing motor mechanical training.

Conclusions: Vulnerable children, those whose parents are infected with HIV, care and support needs to start before children are orphaned. Children infected and affected by HIV should urgently be integrated into existing support systems for people with HIV/AIDS

Key words: HIV/AIDS Infected/Affected children

28. MAPPING OF SEX WORKERS AND DELIVERY OF SERVICE PACKAGES FOR THEM IN THE CITY OF COLOMBO, SRI LANKA

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Introduction: Sex workers are one of high risk groups for sexually transmitted diseases (STDs), Human Immunodeficiency Virus (HIV), and Acquired Immunodeficiency Syndrome (AIDS) transmission in Sri Lanka. The capital city of Colombo has majority of the commercial sex workers ranging from street workers, workers in massage parlors, casinos, to karaoke bars etc. The national HIV/AIDS prevention project has implemented a project on mapping of sex workers and delivery of service packages for them in the city of Colombo, Sri Lanka.

Objectives: 1. To map out the sex workers in the city of Colombo. 2. To minimize their risk for STDS/HIV/AIDS by providing service packages. 3. To link the above sex workers to the nearby sexually transmitted deceases clinics

Methodology: The project was implemented by four field coordinators and eight project focal points, assisted by 30 peer leaders. These groups were given initial training on mapping and STDs/HIV service delivery. A comprehensive service package including one to one counseling, condom promotion through condom distribution centres, referrals to STD clinics etc were offered. A drop in centre was established for the sex workers to facilitate the project activities.

Results: The mapping exercise identified 4574 commercial sex workers in the Colombo municipal area including 275 male sex workers. Majority of them (no=1527) were street based sex workers. Clinic referrals had been done to 274 sex workers. 1508 one to one discussions were held with these sex workers. Networking of sex workers with the sexually transmitted deceases clinics in Colombo has been established.

Conclusion: mapping of sex workers and delivery of service packages for them are essential components in HIV prevention. This task has been successfully achieved by this project.
29. HIV CARE OF PATIENTS WITH CD4 CELLS LESS THAN 50 IN SETI ZONAL HOSPITAL, DHANGADI


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Introduction: In far western Nepal, migration has a significant role in transmission of HIV. Poverty, illiteracy and social conflict are the major problems among the HIV infected population. With the increase number of people living with HIV/AIDS (PLWHA), there is increase flow of patients seeking care and support services. Until now, ART is the best known life prolonging therapy for HIV patients.

Objectives: To explore the manifestation of opportunistic infections and treatment outcome in the late stage of immunosupression.

Methodology: A cross-sectional analytical study was carried out between December 2006 and August 2008 in 65 HIV patients with CD4 count less than 50 cells per cu mm blood undergoing ART in Seti Zonal hospital, Dhangadi. All the information obtained through ART register was entered into SPSS 11.5 and analyzed to get the result of treatment outcome on the basis of CD4 level and weight status.

Results: Among 65 patients with CD4 cells less than 50 per cu mm blood, 52 (80%) were males and 13 (20%) were females, with predominant age group of 30-40 years (50%). Significant relationship was established between the intake of ART and increase in CD4 level (pair t = 7.88, p<0.05). Similarly, 10.3% increase in mean weight of the patients was observed after 1.5 year of the start of ART. Fever (72%) and diarrhea (58%) were found to be the major clinical manifestation. 9.4% of the patients were diagnosed as pulmonary TB cases.

Conclusion: ART service was found to be beneficial for the recovery of health status of the patients as indicated by the increase in CD4 level and weight gain.

30. HIV INTEGRATED COUNSELING AND TESTING SERVICES: AN EXPERIENCE FROM HIMACHAL PRADESH, INDIA

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Introduction: HIV/AIDS, a global public health problem has caused 25 million deaths to date. The number of new infections is ever increasing. Thus the importance of preventing new HIV infections cannot be underscored. The integrated counseling and testing centers (ICTCs) provide a key entry point to access information about HIV prevention, testing, treatment and care

Objectives: The study intended to compare the utilization of ICTCs in light of the scaled up intervention by the National AIDS Control Programme Phase-III.

Methodology: The participants were the clients attending the ICTCs in Himachal Pradesh, India from January to June 2008.

Results: The number of ICTCs was 21 in January 2008. From January to March 2008, 735 (males 3032: females 4319) clients attended the ICTCs. Amongst those who volunteered for HIV testing (males 2837: females 4100) 79 and 59 were detected HIV positive respectively. From April to June 2008, the number of ICTCs increased to 32 and 12808 clients underwent counseling (males 4735; females 8073), and 12020 opted for an HIV test. Out of 4547 males and 7473 females tested, 130 and 121 were detected HIV positive respectively. The provider initiated clients were mainly from the TB units. HIV seropositivity was observed to be associated with married men in the age group of 25-44 years and less number of males went to the ICTCs. The reasons for seeking ICTC Services were mainly STI/RTI, high risk behavior, death or HIV infection in spouse.

Conclusion: The expansion of ICTCs has provided open access to clients to know their HIV sero status, though provider initiated counseling needs to be strengthened. Other alternatives need to be explored.

Keywords: HIV, ICTCs

31. THE KNOWLEDGE, ATTITUDE AND PRACTICE OF HEALTH CARE WORKERS TOWARDS NEEDLE STICK INJURIES ñ A REPORT FROM SOUTH INDIA

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Introduction: One of the serious problems for the Health Care Workers (HCWs) is the risk of occupational exposure, via sharp injuries to blood borne pathogens including HIV. Thirty percent of Needle Stick Injuries (NSIs) were not reported in United States. There are very few studies regarding NSIs in India.
Objectives: The objective of the present study was to assess the knowledge, attitude and practices of HCWs towards NSIs and their reporting behaviour.

Methodology: The study was carried out at a tertiary care hospital in South India. A questionnaire was prepared and was distributed among HCWs. The questionnaire contained information on demographics, vaccination status of the staff, previous history of NSIs, their knowledge regarding Universal Precautions and what actions to be taken after NSIs.

Results: A total of 89 HCWs were participated in the study. 69 HCWs (77.53%) were vaccinated against Hepatitis B virus (HBV). 30.33% were able to recall one episode of previous injury but 74.53% of NSIs were not reported to the authorities. 51 out of the 89 HCWs were not aware about the Universal Precautions.

Conclusion: High rates of NSIs were not reported. Training of HCWs regarding Universal Precautions and 100% immunization against HBV is needed to prevent blood borne pathogen transmission in health care settings.

Keywords: HCWs, NSI, Blood borne pathogens

32. CROSS BORDER HIV PREVENTION, CARE AND TREATMENT FOR NEPALI MIGRANTS AND FAMILIES

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Introduction: In Nepal, migrant laborers and their families make up the largest number of people infected with HIV. Many come from the Far Western region of Nepal where HIV-specific prevention, care and treatment services have been very limited. In order to address this gap FHI Nepal, in collaboration with FHI India, initiated a cross-border HIV prevention, treatment and care program for Nepali migrants and families.

Objectives: To describe the Reaching Across Borders (RAB) Project, an innovative HIV prevention, care and treatment program targeting Nepali migrants and their families in Nepal and India.

Methodology: This is a descriptive summary of the innovative approaches taken to deliver HIV prevention, care and treatment services to migrants and their families in Nepal. Prevention services were rolled out with a radio program and community outreach activities to deliver messages on HIV prevention, testing and treatment services. HIV/STI counseling and testing services were provided in both countries. Those found to be HIV-infected were offered comprehensive services including ART. Cross border communication between sites allowed migrants to continue care services in both countries, including ART with standardized regimens and international transfer protocols. Community and home based care teams were another key to providing comprehensive care.

Results: The project reached 94,141 individuals in Nepal through prevention activities. Nine hundred thirty eight Nepali migrants were provided with counseling and testing, 1,500 migrants provided with CD4 testing services and 515 initiated on ART in Nepal.

Conclusion: This is one of the first reported programs to have successfully provided cross-border continuity of ART among a mobile population. This cross-border prevention, treatment and care program was feasible and effective at reaching migrant populations and their families. Strong communication and community components were essential to its success. Similar programs could be considered in regions with mobile populations.

Keywords: cross border, mobile populations, HIV prevention, care and treatment

33. INFLUENCE OF MOBILITY PATTERNS ON CROSS-BORDER HIV TREATMENT AND CARE INTERVENTIONS

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Introduction: Migration in Nepal is fueled by poverty and limited economic opportunities in rural areas. High-risk behavior amongst labor migrants is responsible for 50% of Nepal’s HIV burden. FHI’s Reaching Across Borders (RAB) Project has successfully established cross-border HIV prevention, care and treatment for Nepali migrants and their families both in Far Western Nepal and destination communities in India.

Objectives: To describe the effect of mobility patterns of migrants on cross-border HIV care.
Methodology:

This is a descriptive analysis of mobility patterns of those reached by RAB and the impact of these on continuity of treatment and care. Based on established sero-prevalence and predicted mobility patterns among migrants, RAB supported the establishment of HIV-related clinical services in Kailali, Kanchanpur and Doti in Nepal, along with Delhi, Mumbai and Thane in India. Data was collected from transfer records and home visit reports.

Results: After initiation, a complex pattern of migration between countries became evident. Whilst project sites in Nepal were major sources of migrants and those in India major destination points, many HIV-positive migrants from Far West Nepal traveled to other locations in India (Tamilnadu, Kerala, Punjab), whilst many in Mumbai and Delhi returned home to other regions of Nepal (Central, Eastern, Western). Staff provided contact information for local ART programs. Various patterns of travel affected logistics for ART provision. Extended ART supplies and emergency contact information were needed for short-term work and harvest/festival trips. Permanent international transfer was needed for those becoming ill. Despite effective transfer mechanisms between sites, difficulties arose with transfers to non-project locations. Sites reported low loss-to-follow-up rates overall, but frequently could not ensure continuity of ART for those transferring outside of the project.

Conclusions: Wider expansion of cross-border programs is essential for maximum impact of national HIV treatment and care programs, due to complex mobility patterns.

Keywords: cross border, mobility patterns, HIV care and treatment

34. SEXUAL BEHAVIOR AND PREVALENCE OF HIV AMONG MEN WHO HAVE SEX WITH MEN (MSM) ATTENDING STI CLINIC IN SOUTH INDIA

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Background: One of the greatest public health failures in the fight against AIDS is the worldís inability to prevent widespread HIV infection among Men who have Sex with Men (MSM).

Objective: The study objective was to document the sexual behavior, HIV prevalence among (MSM) attending the STI outpatient clinic of the NGO Social Welfare Association for Men (SWAM), Kancheepuram District, India.

Methods: 69 MSM aged >18 years attending this clinic from December 2007 to August 2008 were enrolled. Informed consent was obtained and a structured questionnaire was administered. Clinical examination, serological test for HIV and Counseling was done.

Results: Among the 69 MSM, 75.3% were 20-30 years & 11% were 31-40 years, 4.3% were above 50 years. Majorities were from lower socioeconomic status. Education Status: Ten percentage were uneducated, Graduates-27% and 5-10th standard-44%. About one-third (23.2 %) were married heterosexually. Sexual behavior: More than two-third (75.3%) had anal sex & all 69 MSM had oral sex; ; Condom usage before counseling was six percentages, after counseling was 53.6% 15.9 % had sex with female sex workers &; 25% received money for sex, 43% pleasure of sex and 32% have sex for both.13% were diagnosed as HIV positive. High risk behaviors, such as having multiple sex partners, not using condoms consistently, not learning about HIV are common causes of HIV among MSM.

Conclusions: Early diagnosis, Intervention and repeated Counseling and Sex Education, Treatment and Referral for higher centers are essential for control and reduce the high prevalence of HIV among MSM.

35. IMPLEMENTING TARGETED HIV AND AIDS PREVENTION ACTIVITIES AMONG CLIENTS OF FEMALE SEX WORKERS: PROGRAM EXPERIENCE

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Introduction: Aiming to prevent heterosexual transmission of HIV among the CLSWs and their partners, BRAC (with three national NGOs) piloted targeted HIV/AIDS prevention activities among the CLSWs in collaboration with Government of Bangladesh (GOB) and UNICEF from January 2007 till December 2007. The activities were executed to further scale up coverage of this core group (January 2008).

Objectives:
- Targeted prevention and intervention were implemented among CLSWs over 13 months to:

**Background:** The sexual intercourse is the most basic, fascinating and most important facet of the life of the human beings. But this very natural human behaviour is the main mode of transmission of a set of communicable diseases, the sexually transmitted infections including Human Immunodeficiency viral infection. The consequences following untreated or unrecognized infections are either irreversible or ended up as a premature death. Hence, the primary prevention of these infections by promoting very simple preventive measures among the sexually active persons is essential and be urgently executed.

**Methodology:** Targeted prevention intervention with risk reduction services was implemented to address 6,336 CLSWs residing in three city corporation areas of Bangladesh. Individually targeted Behavior Change Communication (BCC) promoting safer sex and STI services including condoms was provided including STI/HIV/AIDS knowledge. Promotional activities facilitating Drop in Center (DIC) based services were also carried out.

**Result:** Up to June 2008

- 6,336 CLSWs provided with individually tailored BCC (each month) through 77,835 one to one contacts and 4,229 individual counseling sessions
- 23,930 condoms were demonstrated and 3,15,681 pieces distributed
- 78% CLSWs (registered) visited DIC to utilize services
- 50% CLSWs (registered) received syndromic STI case management from the DICs (3,625) including medicine and 80% of them revisited DIC for follow up
- Around 6% CLSWs (registered) went for VCT

**Conclusion:** The project was piloted by BRAC to scale up coverage and quality of targeted intervention for CLSWs. Incorporating program experience and piloting innovative strategies (introducing security money) to ensure follow up of STI patients, referral linkage with public sector to scale up STI services and resource sharing with existing service provider network for quality STI care (both contributed to program success). Social mobilization of local administrative and community stakeholders led to implementation of sensitive and confidential activities with minimal obstacles.

**Keywords:** Right based, Targeted intervention, Innovation and cost minimization, HIV/AIDS Prevention.

### 36. PROMOTION OF CORRECT USE OF CONDOMS AMONG CLIENTS OF MATERNAL AND CHILD HEALTH CLINIC BY PRIMARY HEALTH CARE WORKERS: THE GAP BETWEEN PERCEPTION AND PERFORMANCE

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**Background:** The sexual intercourse is the most basic, fascinating and most important facet of the life of the human beings. But this very natural human behaviour is the main mode of transmission of a set of communicable diseases, the sexually transmitted infections including Human Immunodeficiency viral infection. The consequences following untreated or unrecognized infections are either irreversible or ended up as a premature death. Hence, the primary prevention of these infections by promoting very simple preventive measures among the sexually active persons is essential and be urgently executed.

**Objective:** To evaluate the training programme directed towards the primary health care workers on promotion of correct use of condoms among the clients attending the Maternal and Child Health Clinics in two divisional Health areas in the District of Matale, Sri Lanka.

**Methodology:** The study design was an intervention study design with the pre and post intervention assessments among the participants of control and intervention areas.

During pre-intervention assessment, the data collection on aspects related to promotion of correct use of condoms among the primary health care workers of the control and intervention areas was done with a self-administered questionnaire. The demonstration skills of the correct use of condoms were assessed by direct observation using a check-list.

Based on the findings of the above assessments, the need-based training programme was planned and executed among the primary health care workers of the intervention area.

Six months after the intervention, the post-intervention assessment was done by using the same data collecting instruments.

**Results:** All health care workers of the intervention and control areas expressed that they introduce and educate their clients on correct use of condoms in both pre and post-test assessments. But a few health care workers had distributed condoms to unmarried youth. During pre-test assessment less than 25% of the participants of both control and intervention areas were able to demonstrate the correct use of condoms. During post test assessment 84% of the participants of the intervention area were able to demonstrate all the steps in condom use correctly \( P = 0.002 \).

**Conclusion:** The need-based training programme directed at Primary Health Care Workers will improve the skills necessary for the effective health education for the service seekers.
Key Words: HIV/AIDS, Condoms use, pre and post intervention.

37. RISK ON HIV/AIDS AMONG HOTEL BASED SEX WORKERS IN DHAKA METROPOLITAN AREA

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Introduction: The commonest risk behavior for HIV/AIDS across Asia is the trading of sex for money. In the context of a conservative society such as Bangladesh, the issues surrounding sexuality and STDs are stifled, stigmatized and hence hidden. This study aimed to assess the risk of HIV/AIDS among the hotel based sex workers (HBSWs) which may help the policy makers in implementing programs to prevent spread of HIV/AIDS.

Objectives: To assess the risk of HIV/AIDS among hotel based sex workers in Dhaka Metropolitan area.

Methodology: Data was collected from seven residential hotels and three NGO clinics (Drop in centre for hotel based sex workers) at old Dhaka, Motijheel and Mohakhali. Face to face interview of 120 hotel based sex workers were done using a pre-tested semi structured questionnaire.

Results: Average age of the respondents was 17 years. 57.50% received foreign clients and 80.83% had non commercial sexual relation. 51.67% were infected with sexual transmission infection (STI). Around 97% sought treatment for last STI but 37.77% of them selected wrong professionals for treatment. About HIV transmission 79.17% said of sexual act, 39.17% unscreened blood, 15% sharing of needle syringe, 6.67% mother to child and 20.74% do not know about HIV transmission. About knowledge on HIV prevention 81.67% know about use of condom, 38.33% blood screening, 14.17% use new needle syringe and 3.33% know avoid commercial sex as a HIV prevention method and 18.33% hotel based sex workers do not know any prevention method. Nobody said of using condom constantly.

Conclusion: Based on this study the risk of HIV/AIDS is very high among the hotel based sex workers of Dhaka city. Appropriate initiative is needed to increase the level of knowledge about safer sex among HBSWs.

Keywords: HIV/AIDS, STI, HBSW, Bangladesh

38. PATCH IN THE GUT: DOES IT POINT ANYWHERE?

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Introduction: Esophageal Candidiasis (EC) is infection of the esophagus, the tube that connects the mouth to the stomach. It is caused by the overgrowth of Candida, the normal flora of human body in the mouth, gastrointestinal tract and vagina as well as in skin. Candidal esophagitis has received special attention ever since beginning of the HIV epidemic. The incidence of overall rate of esophagitis among patients infected with HIV has been reported to be as high as 15-20%. Esophageal candidasis is one of the diagnostic criteria for AIDS and a lowered CD4 lymphocytes count <200mm\(^3\) is major predisposing factor for the development of candidiasis in HIV infected person.

Objective: To understand the dynamic relationship between CD4 count and the occurrence of esophageal candidiasis a retrospective cohort study was carried out in our tertiary care set up in Coastal Karnataka State, Manipal.

Study: From September 2006 to September 2008. Retropositive patients with symptoms of odynophagia, dysphagia or retrosternal burning pain with presumptive diagnosis of EC later confirmed with mycological findings were included in the study. All the patients were hospitalized and the upper digestive tract was examined endoscopically and esophageal scraping was sent to the mycology laboratory for KOH mount and culture. The diagnosis was confirmed by 10% KOH calcoflor microscopy and CD4 counts established by Flowcytometry.

Result and Conclusion: The predominant species involved were Candida albicans, Candida glabrata and Candida guilluermonti. The risk factors, therapeutic management and prognosis of esophageal candidasis in the study group will be discussed in the light of their utility as a marker in HIV Infected Patient.
39. A REVIEW OF THE USE OF NATIONAL HIV OCCUPATIONAL POST EXPOSURE MANAGEMENT GUIDELINES AT A PERIPHERAL STD CLINIC, SRI LANKA

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Introduction: Health care workers are at higher risk of HIV infection through accidental exposure to infected blood and other material. Thus appropriate management of occupational exposures and regular monitoring of such procedures become important elements of workplace safety. Ministry of Health has introduced a standard exposure report to record the incidents of occupational exposures.

Objectives: To describe types of occupational exposures and categories of health care workers who sought post exposure care. To evaluate the use of National HIV occupational post exposure management guidelines at the STD Clinic.

Methodology: A descriptive study was conducted at the STD Clinic Kandy. Exposure reports of all health care workers who sought occupational post exposure care at the STD Clinic between 1st of January and 31st of December 2007 were analyzed.

Results: Of the total (60) there were 11 males and 49 females. Majority of them were nurses (31) followed by laborers (12), medical students (8), doctors (6), and others (3). The largest exposure type was percutaneous injuries (52). All Source persons (49) and exposed persons (57) who underwent HIV testing at the time of initial consultation were HIV negative. Exposure cord was not marked in 43 (72%) and incorrectly! marked in 9 (15%) exposure reports. None of the exposed individuals had been received post exposure prophylaxis and undergone HIV testing after 6 months of exposure.

Conclusion: Nurses are the largest category of health care workers who seek occupational post exposure care. Exposed persons should be motivated to attend follow up HIV testing. Doctors should be encouraged for proper documentation of exposure reports and follow up exposed persons.

40. GETTING AROUND DISCLOSURE AND ADHERENCE

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Introduction: Disclosure is strongly associated with the uptake of ART, adherence and HIV prevention. The ability of individual to disclose is embedded within an emotional, social and economic context.

Objectives: To ensure proper treatment

Methodology: Two in depth interviews were undertaken with thirty patients enrolling an ART program, the first at the onset of treatment, the second after four months. To explore the community context to participant experiences interview were taken with nine lay people reported to be providing support to each of these participants in order. For an understanding of the institutional context within which treatment occur, two health care providers were interviewed about attitudes of health staff towards patients seeking ART.

Results: Factors associated with disclosure and support echo those previously reported; positive state of mind, sense of personal responsibility and agency, belief in treatment efficacy, and lower AIDS-related stigma. This study suggests that these determinants are inextricably linked to deep-seated social inequalities. Patient’s marital status, gender and age shape their support needs and navigate around social and economic barriers. Strategies include for example using a confidante to negotiate on the patient’s behalf without explicit disclosure. However, patients were more likely to disclose to personal careers in order to secure continued support.

Conclusion: We know about disclosure and adherence in government ART programs in Nepal comes from early initiators. Such people are expected to have strong materials or social capital, or be skillful in securing support and avoiding social approbation. Programs and policies need to be cognizant of and responsive to the pervasive social inequalities that strongly restrict the lives of the majority of people who have not yet sought treatment and those having difficulty with adherence.

Keywords: Getting around Disclosure and Adherence

41. TREATMENT ADHERENCE - INVOLVEMENT OF PLHIV

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Introduction: ART is life long treatment PLHIV who have started taking ART might stop it abruptly because of the challenges associated with it. Hence a thorough monitoring mechanism is needed so that PLHIVs taking ART strictly adhere to the medicines. PLHAs on ART in particular need continuous counseling at various stages and social support in order to adhere to the life long treatment.
Objectives: To strengthen free ART distribution program by promoting treatment adherence along with other care and support services through treatment counseling centers.

Methodology: To supplement and strengthen the counseling and other services provided at the government ART centers, establishment of Treatment Counseling Centers at the public ART centers was envisaged. A team of three counselors - two professional counselors and one peer counselor motivate and prepare clients to accept their status, build social support and refer them to the respective District Level Networks of people living with HIV/AIDS (DLNs).

Results: Under the program iAccess to Care and Treatment-ACTI 50 Treatment counseling centers (TCC) are being established. TCCs are promoting treatment adherence, psychosocial and family support to PLWHAs, healthy lifestyle and safe sex practices among the PLWHAs. TCC act as the vital link between the ART Centers and the District Level Networks of people living with HIV/AIDS (DLNs) so that PLWHAs can remain in the larger care and support system. Availability of professional counselors and a peer counselor to share burden of work of the ART counselors through ACT project enhanced acceptance of TCCs.

Conclusion: TCC helped in improving treatment adherence, reducing defaulters, stigma to HIV and influencing peer norms. However, an operational guideline is required for the implementation uniformity.

Keywords: HIV/AIDS, PLHIV, Treatment Adherence, Counseling

42. SOCIAL SUPPORT FOR PERSON LIVING WITH HIV: A COMPARISON OF THE EFFECTIVENESS OF THE PROFESSIONAL VERSUS HIV INFECTED VOLUNTEER DRIVEN SERVICE

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Introduction: The HIV/Aids epidemic has placed an increasing burden on public health facilities in developing countries that are already functioning with limited resources. There are many NGOs and community based organizations in Nepal that are active in providing social support to people living with HIV. This study is a cross-sectional exploratory research to evaluate and compare effectiveness of HIV infected volunteer support and non-HIV infected volunteer (professional) support for those living with HIV in terms of helping them handle the stigma which, in turn, is linked to other services for their need0(need provide by other agencies and defined as more critical in increasing quality of life).

Objectives: The study seeks to examine whether a volunteer/peer driven social support is as, or more effective, than traditional professional support service in improving an HIV positive clientís ability to live more independently, non-stigmatized, and receive satisfactory service with better quality of life. As the number of those living with the disease and corresponding mental health and/or drug and alcohol problems grow, and government money and availability of staff becomes critically scarce, there is, and will continue to exist, an emergent need to find an alternative intervention for effective social support for people living with HIV.

Methodology: Drawing on the convenience sample of PLWA (N= 143) methodology, extensive field research was conducted in eight NGOs facilities and one government facility. Structured questionnaires were administered to elicit information on the demographic, quality of life, client satisfaction from service, and social support between September 2008 and October 2008. Besides interviews, group and informal discussions were held to cross-check and verify the reliability of the data.

Results: The multivariate analysis of data focused primarily to test the correlation between two types of interventions: time spent by volunteer with client, and satisfaction level from service and quality of life. The study has found that respondents getting support service through HIV infected volunteer were less stigmatized, more satisfied from the service and had better quality of life than the PLHA getting support service through professional or non infected volunteer.

Conclusion: Recommendations were made for agencies to consider utilizing HIV infected volunteers in a professional capacity to meet need of PLHA. Future research could focus on further role of HIV infected volunteer in terms of providing home based care.

43. OCULAR MANIFESTATIONS IN HIV POSITIVE AND AIDS CASES IN NEPAL AND ITS CORRELATION WITH CD4+ T LYMPHOCYTE COUNT

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Background: AIDS is a multi systemic disease caused by Human Immuno-deficiency Virus. Ocular manifestations have been reported in approximately 70-80% of HIV cases. HIV has the capability to affect every organ and system in our
body by direct damage by virus or by rendering the host susceptible to opportunistic infections. In general CD4+ T Lymphocyte count has been used to predict the onset of certain ocular infections in patients who are HIV positive. CD4+ T-cell count above 500 cells/mm³ hardly has any ocular involvement whereas less than 500 cells/mm³ is associated with Kaposi's sarcoma, HZO, Lymphoma and Tuberculosis. CD4+ T-cell less than 200 cells/mm³ is associated with Toxoplasmosis, cryptococcosis, HIV retinopathy and less than 50 cells/mm³ is associated with HIV retinopathy, CMV retinitis, Varicella-Zoster retinitis, Mycobacterium avium complex infections.

AIM - To study the various ocular manifestations in HIV/AIDS cases and their correlation with CD4+ T Lymphocyte count.

Methods - A cross sectional, descriptive study was done at B. P. Koirala Lions Centre for Ophthalmic Studies (BP KLCOS) during the period between January 2007 to July 2008 (a period of one and half year).

RESULTS - A total of 117 HIV infected cases were enrolled in this study, all of whom had got done their CD4+ T Lymphocyte count. Among them 76 (64.95%) were male and 41 (35.05%) were female. The average age range of the patient was between 20-40 years and average duration of HIV known to them was 1-5 years. The commonest mode of acquisition of HIV/AIDS was heterosexual relationship with commercial sex workers. Total ocular involvement was seen in 55 (47%) patients. In relation to CD4+ T-cell count and ocular manifestations, 11.9% with count above 500 cells/mm³, 20% with count between 200-500 cells/mm³, 64.86% with count between 51-199 cells/mm³ and 100% with count below 50 cells/mm³ had various ocular manifestations respectively (p=0.0002).

Anterior segment manifestations were found to be more common in patients with higher CD4+ count whereas posterior segment findings were more common in those with lower range of CD4+ count. The posterior segment manifestations like HIV retinopathy and CMV retinitis comprised 29.27%, 2.7% in patients with CD4+ count between 51-199 cells/mm³ respectively and 52.1% and 21.7% in patients with CD4+ less than 50 cells/mm³ respectively. Similarly systemic association was found in 46.15% of total HIV positive cases. Maximum systemic associations were found in patient with CD4+ count between 51-199 cells/mm³ and minimum systemic associations with CD4+ more than 500 cells/mm³ and among them commonest was the Pulmonary Tuberculosis (29% of total cases, and 62% of all associated systemic manifestations, p=0.00003).

In this study total 56 (47.8%) patients were taking HAART therapy. No one with CD4+ above 500 cells/mm³ was taking HAART whereas 23 (100%) patients with CD4+ count below 50 cells/mm³ were taking HAART. Ocular complaints were present in 26.49% though 93.16% presented with good vision at presentation whereas ocular manifestations were present in 90.3% of patients with complaints and 31.3% of asymptomatic patients. Mongolians (29.9%) were the commonly affected ethnic groups.

Conclusion - Ocular manifestations are commonly seen in HIV/AIDS cases and its correlation with CD4+ count bears quite significance.

Abbreviations: 1) BP KLCOS-B.P. Koirala Lions Centre for Ophthalmic Studies, 2) IOM-Institute of Medicine, 3) HZO- Herpes Zoster Ophthalmicus, 4) CMV- Cytomegalovirus, 5) HAART-Highly Active Anti-Retroviral Therapy.

44. MOBILE CD4 CAMPS FOR HARD-TO-REACH PLHA IN RESOURCE POOR SETTINGS

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Introduction: The Reaching Across Borders (RAB) Project is implemented in Nepal and India to reduce HIV transmission and increase treatment access among Nepali migrants. PLHA from hilly districts in Far West Nepal have difficulty accessing comprehensive HIV care including ART services due to poverty, geographical constraints and limited roll-out of services in the region. Only one CD4 machine is available in the region and RAB is addressing this gap by providing HIV care and treatment services in three government hospitals as well as introducing mobile CD4 services in rural locations.

Objectives: To describe how the provision of mobile CD4 services improved treatment access for poor and hard-to-reach PLHA.

Methodology: The FHI/Nepal managed RAB project supported SZH to start CD4 testing services in December 2006 in the Far West region. To date about 1,500 PLHA have benefited. As those living in remote locations did not have access, project staff conducted mobile CD4 clinics in Doti and Achham communities at regular intervals. After clinical examination, blood samples for CD4 testing were taken to SZH and test results sent back to District Hospital ART sites. An experienced team of medical officer, laboratory technologist and staff nurse worked together with hospital staff to provide care and treatment services to PLHA during these mobile CD4 clinics.

Results: Two hundred thirty six PLHA from poor and hard-to-reach communities accessed CD4 testing services during six mobile camps. Based on CD4 results and clinical examination, 23% of these started ART in district hospitals close to their homes.

Conclusion: Poor PLHA from remote communities were able to begin life-extending ART due to the mobile CD4 services operating in their districts. These mobile camps, coupled with pre-ART services, can be replicated nationally to reach PLHA in other remote locations of Nepal.
Keywords: CD4 testing, mobile clinics, increasing treatment access

45. SPEAK OUT PICTURES....... iFORTUNATE DRUG USERS?

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2Director- Fundraising
3Program Director-AFA,Sano Paila (a little step)

Mr. Kanchan Jha
Executive President
Sano Paila (a little step)

Introduction:

Injecting drug use and HIV/AIDS in Nepal - According to report from National Center for AIDS and Sexually Transmitted Disease Control (NCASC), Nepal, the number of inject drug users by the end of 2006 were likely to be 30,000 to 35,000; of whom 12,000 to 15,000 are HIV infected. Injecting drug use appears to be extensive in Nepal and data indicate that Nepal has passed from being a low risk country to being one with a concentrated epidemic due to constant increase in HIV prevalence among IDUs. According to a report of NCASC (2007), the infection rate among IDUs is 32.7% whereas it is 3.8% among FSWs. The high infection rate among IDUs is mainly due to lack of awareness and adequate preventive measures and failure to develop integrated harm reduction programs.

Injecting drug use and HIV in Birganj - Birganj is located in Parsa district and situated about 3 kilometers north to the Indian border, Raxaul. Birganj is an important land entry point for goods to Nepal and is known as a business-hub for import and export between Nepal and India. Now Birganj is gaining its (def)ame as a drug capital of Nepal as this border town has become a recognized hub for smuggling goods and trafficking illegal drugs into Nepal. The easy availability of illegal drugs like heroin (brown sugar) at a cheap price and the lack of awareness about drug use especially among youngsters are believed to be responsible for dramatic increases of injecting drug use in Birganj.

Family Health International Nepal (FHIN) in its 2001 report states, estimates run from 800 to 2000 drug users with 300 to 700 IDUs and the primary choice of drugs for IDUs has shifted from buprenorphine to brown sugar (heroin). In 2006, the registered number of IDUs in Parsa and Bara was 600. Key stakeholder organizations consider the number of drug users close to over 3,000-4,000 with 800-900 IDUs. A study hosted by Sano Paila in 2007 estimated the prevalence of injecting drug use in Birganj to be 1100.

Objective: To improve drug use prevention and control outcomes in Birganj, Parsa district, Nepal, and to promote and raise awareness about injecting drug use and its direct exposure to the transmission of HIV.

Method/ Activities: - To improve drug use prevention and control outcomes in Parsa, Sano Paila is delivering fellowship and counseling services to IDUs and injecting drug users living with HIV/AIDS (ILWHA). These services not only prevent drug use but also help limit the transmission of HIV via intravenous drug use (i.e. sharing of needles). Based in Birganj, Sano Paila operates a community level program Action for Addiction’ (AFA) that emphasizes and promotes the multi-dimensional approach of awareness, counseling, support and surveillance related to drug use and HIV transmission.

On World AIDS Day -2007, December 1, Sano Paila and its community partners commemorated its first Injecting Drug Users and AIDS (IDUs-AIDS) awareness walk rally in Parsa. The rally comprised of IDUs, members, volunteers, donors, students, youth and children and its

On December 15, 2007 Sano Paila with the support of Birganj Municipality and other local donors launched AFA as a role model project that intended to encourage drug users to take the next step in seeking help and drug treatment. The project’s first role model was Sadhu Ram Khadgi, age 43 and an IDU for 18 years. A press conference was called and Sadhu Ram made an official announcement of his decision to say ‘no to drugs’ and to become the first role model of AFA. As part of the project, a temporary camp was built on the main road of the town, with all necessary lodging, food, medical and security arrangements. Khadgi resided at the camp for 40 days and recovered from drugs.

AFA was the first of its kind event in the history of Birganj and its main objective was to help drug users understand that ‘there still is someone in you that says no to drugs; change is possible’, which is also the official slogan of AFA. T-shirts with the AFA slogan were also distributed to drug users. After recovery, Sano Paila appointed Sadhu Ram as program director for AFA based on ‘special knowledge and experience in the field. Through AFA Sadhu Ram is delivering fellowship services to drug users and is advocating against injecting drug use and HIV/AIDS.

Current AFA Services

At present, AFA not only delivers services that disseminate information and behavior change expertise to Injecting Drug Users (IDUs) and IDUs living with HIV/AIDS (ILWHA) but also encourages parents and key influencers of youth to continue their healthy actions to prevent future drug problems. Through AFA, people are encouraged to seek help if they or someone they know is experiencing drug’s problems.

Clients are encouraged to enroll in AFA’s éself-help drug rehabilitationí treatment program and become an AFA role model. The AFA slogan were also distributed to drug users. After recovery, Sano Paila appointed Sadhu Ram as program director for AFA based on ‘special knowledge and experience in the field. Through AFA Sadhu Ram is delivering fellowship services to drug users and is advocating against injecting drug use and HIV/AIDS.

Clients are encouraged to enroll in AFA’s ‘self-help drug rehabilitationí treatment program and become an AFA érole modelí in the community. So far, there are three érole modelsí and they are presently working for AFA. There are currently 10 volunteer staff (mainly recovered clients) and 55 field volunteers working under the program. At the end of August there were 350 drug users signed up with the center and are also involved in the AFA Peer led intervention program. At present, we deliver the following services:

I) Fellowship Counseling (FC) and Referral for Treatment
II) Harm reduction and Peer led intervention programs
III) Enhancing community awareness, participation and advocacy
Abstracts for Oral Presentation on TB Laboratory
(O/TBL/1-17)
1. ANTIMYCOBACTERIAL ACTIVITY OF PLANT ESSENTIAL OILS USING LUCIFERASE REPORTER PHAGE (LRP) ASSAY

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Introduction: Tuberculosis remains a major infectious disease worldwide. Search for novel and more effective antituberculosis agents is on to tackle multidrug resistant strains. Plants and other natural materials are a valuable source of new antimycobacterial drugs or a lead compound itself from which new drugs may be developed. Plant extracts provide unlimited opportunities for new drugs because of the unmatched availability of chemical diversity.

Objectives: To screen seven selected plant essential oils against Mycobacterium tuberculosis H$_{37}$Rv using luciferase reporter phage assay. To isolate the active compound from the most potential oil and to determine the MIC range for clinical isolates of M. tuberculosis.

Methodology: In vitro activity of selected essential oils (cinnamon, clove, geranium, lemon, lime, orange and rosemary oils) was investigated against Mycobacterium tuberculosis H$_{37}$Rv using rapid LRP assay. Three different concentrations viz. 25, 50 and 100µg/ml were used in duplicates for preliminary antimycobacterial screening. Based on bioassay guided fractionation one active isolate was identified and structural elucidation was done with different spectral analysis. Minimum inhibitory concentration was determined for active isolate against drug sensitive and drug resistant clinical isolates of M. tuberculosis.

Results: Among the essential oils tested, cinnamon oil (88.01%) showed maximum antimycobacterial activity followed by clove (55.92%) and rosemary (51.00%) oils at 100µg/ml concentration. Cinnamon oil was found to show significant activity as low as 50µg/ml (53.45%) while others failed to inhibit M. tuberculosis. Cinnamon oil was further fractionated. Based on bioassay guided fractionation, fraction three identified as trans-cinnamaldehyde and found to be most potent. MIC values ranged from 5-100µg/ml for drug sensitive and drug resistant clinical isolates of M. tuberculosis.

Conclusion: The results suggest that cinnamaldehyde has antimycobacterial activity. It is worth pursuing further studies on this compound to evaluate its potential as a new antituberculosis agent.

Keywords: Antimycobacterial, Essential oil, Cinnamaldehyde and LRP assay

2. PHAGE COCKTAIL SUPPLEMENTED WITH PHAGE LYSIN TO CONTROL OVERGROWTH OF NORMAL FLORA IN PROCESSED SPUTUM SPECIMENS GROWN IN LIQUID MEDIUM

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Introduction: Rapid diagnosis of tuberculosis is essential to control the spread of tuberculosis especially in multi drug resistant tuberculosis and in TB and HIV co-infection. The overgrowth of normal flora escaping the action of sputum processing chemical like 4% NaOH is the major problem in rapid broth based detection systems, gravely affecting the sensitivity of any rapid assay. Use of phagebiotics to control this problem has been established and it forms a novel, bio-friendly approach to tackle non-mycobacterial contaminants.

Objectives: Strengthening of phagebiotics by phage-lysin for complete and effective control of normal flora in sputum specimens and evaluation of the same in retrieval of Mycobacterium tuberculosis by luciferase reporter phage (LRP) assay.

Methodology: Crude lysin was prepared from phage host mixture using standard procedure. About 120 sputum samples processed with 4% NaOH were collected and divided in to four aliquots after inoculating on to blood agar plates (Stage I). Nutrient broth was added to one part (Stage II) that served as control. To the other three parts, phagebiotics (Stage III), phagebiotics-lysostaphin (Stage IV) and phagebiotics-lysin (Stage V) were added, randomized, incubated at 37°C for 18-24 hours and inoculated on blood agar plates. Lysin was assayed for retrieval of M. tuberculosis up to 3 days by LRP assay using standard protocol.

Results: The phagebiotics supplemented with lysin arrested the growth of surviving normal flora in more number of samples (112) when compared to Stage II (15), Stage III (70) and Stage IV (81) and found to be significant statistically. Lysin did not show any inhibitory activity towards M. tuberculosis H$_{37}$Rv and clinical strains of M. tuberculosis.

Conclusion: Phagebiotics supplemented with lysin is able to control the overgrowth of normal flora in liquid media for rapid diagnosis of tuberculosis.

Keywords: Mycobacterium tuberculosis, Phagebiotics and Lysin
3. ANTIMYCOBACTERIAL AND ANTIBACTERIAL ACTIVITY OF ACTINOMYCETES FROM LESS EXPLORED ECOSYSTEMS

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Introduction: The worldwide problem caused by tuberculosis and the lack of new drugs necessitate the search for novel drugs to control MDR-TB. Actinomycetes have long been considered as a source for high value metabolites especially antibiotics.

Objective: To screen actinomycetes isolated from less explored ecosystems for antimycobacterial and antibacterial activity.

Methodology: Actinomycete strains isolated from less explored ecosystems like desert, marine, alkaline and forest soils samples were screened for antimycobacterial and antibacterial activity. The culture filtrates of fermented actinomycete strains were tested against Mycobacterium tuberculosis H37Rv, a multi drug resistant isolate and a drug sensitive clinical isolate of M. tuberculosis by luciferase reporter phage (LRP) assay. Ethyl acetate extracts of fermentation broth and methanol extracts of mycelium prepared from actinomycete strains were tested for antimycobacterial activity. Antibacterial activity was also studied by cross streak and disc diffusion methods against Staphylococcus aureus, Bacillus subtilis, Escherichia coli, Salmonella typhi and Pseudomonas aeruginosa. In all, 30 ethyl acetate and methanol extracts from 15 strains were tested against the bacterial strains by disc diffusion method.

Results: In LRP assay out of 15 actinomycete culture filtrates tested, 13 showed antimycobacterial activity. Ethyl acetate and methanol extracts of 5 out of these 13 antimycobacterial strains resulted in > 50% reduction in RLU. In cross streak method, 9 out of 15 strains tested showed antibacterial activity. Totally 10 ethyl acetate and 6 methanol extracts inhibited bacterial pathogens tested by disc diffusion method. Actinomycete strains D10, NEK5, ANS2, D5 and R2 showed good activity against both mycobacteria the bacterial pathogens tested.

Conclusion: The ecosystems explored are potential sources for antagonistic actinomycetes as 13 out of 15 strains tested could inhibit Mycobacterium tuberculosis.

Keywords: Actinomycetes, Antimycobacterial and LRP assay

4. CHARACTERIZATION OF RPO B GENE FOR DETECTION OF RIFAMPICIN DRUG RESISTANCE BY SSCP AND SEQUENCE ANALYSIS


Introduction: Rapid determination of drug resistance against rifampicin is of utmost concern for efficient control of multidrug-resistant tuberculosis (MDR-TB) as rifampicin resistance was proved to be an important marker for checking multidrug resistance (MDR) in clinical isolates of M. tuberculosis.

Objectives: Diagnostic usefulness of PCR- single strand conformation polymorphism(SSCP) for the rapid detection of resistance to first line anti tuberculosis drug such as Rifampicin (which is generally considered a marker for determination of MDR strains) for checking its utility as a rapid screening test for determination of MDR drug resistance.

Methodology: PCR- single strand conformation polymorphism(SSCP) and DNA sequencing within the 157-bp region of the rpo B gene (Ala500 to Val550) were performed in 22 Rifampicin resistant and 11 Rif sensitive strains of M.tuberculosis at NICD. Phenotypic drug susceptibility test were performed on these strains using 1% proportion method.

Results: Rifampicin resistance was detected successfully by PCR-SSCP in 20/22(90.90%) Rif strains showing nine different mutation in seven codon positions: codon 513 (CAACG/CCA), 516(GACGG/GTC), 507 (GGCG/IGAC), 526(CACCG/IAGC, TAC), 531(TCG/ITTG, TGG), 522(TGC/ITGG), 533(GTG/ICCG). 2 Rif strains showed identical PCR-SSCP pattern with wild type H37Rv. Sensitivity and specificity was calculated as 90.90% and 100%; 77.27% Rif strain showed a single mutation and 9.09% had no mutation. 3 Rif strains showed a characteristics double mutation in two most prevalent codon position 526 and 531. Our finding support the common notion that rifampicin resistance genotypes are generally present in codons 516, 526, and 531, most frequently found in Rif strains of M.tuberculosis regardless of geographic origin.

Conclusion: With 90.90% and 100% sensitivity and specificity, our result supports the earlier notion that rifampicin resistance generally present on codon 516, 526 & 531, and these genotype most frequent found in rifampicin resistant strains of M.tuberculosis regardless of geographic origin. PCR-SSCP test implementation for determination of Rifampicin drug resistance may result in a net time gain of several weeks over conventional resistance testing in early determination of multidrug resistant tuberculosis.

Keyword: M. tuberculosis, Multidrug resistant tuberculosis (MDR), Rifampicin
5. CLINICAL TRIALS TO EVALUATE THE NEW METHOD TO DIAGNOSE LATENT AND ACTIVE TUBERCULOSIS


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Introduction: Delayed Hypersensitivity reaction in response to the skin test with tuberculin (PPD) cannot distinguish between TB infection (latent TB) or active tuberculosis on one hand, or as a result of BCG vaccination, on the other. This situation diminishes the value of the tuberculin skin tests (TST) as a diagnostic test in countries where BCG is being used for mass vaccination.

Objectives: To determine the specificity and sensitivity of a newly developed diagnostic skin test (DIASKINTEST) in comparison with TST for diagnosis of latent and active tuberculosis vs. results induced by the BCG vaccination.

Methodology: Multi-center, open-labeled clinical trial to compare the sensitivity and specificity of DIASKINTEST and TST by testing subjects in various age groups, including healthy individuals, those with established pulmonary TB, individuals with a history of TB infection in the past, and in children that had BCG-caused osteitis as a complication after BCG vaccination.

Results: Both the DIASKINTEST and TST tests were positive in all 59 patients with active TB, and positive in all 13 teenagers and children who had converted to positive without any clinical symptoms of active TB. At the same time, DIASKINTEST was negative while TST was positive in all 20 children that had BCG-caused osteitis.

Conclusion: DIASKINTEST is specific for detection of either active TB disease or latent TB infection, but negative in cases of delayed hypersensitivity caused by BCG, thus it can be considered more specific than TST for the diagnosis of TB infection or active TB.

Keywords: Skin tests, BCG, Tuberculin

6. COMPARISON OF THE BACTEC MGIT 960 CULTURE SYSTEM WITH LOWENSTEIN JENSEN CULTURE MEDIUM FOR RECOVERY OF MYCOBACTERIUM TUBERCULOSIS AMONG THE RETREATED PATIENTS REFERRED TO GENETUP

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Background: The study was performed for the relative sensitivity of the MGIT culture system over the LJ culture medium for the recovery of Mycobacterium tuberculosis among the retreated patients. MGIT system is a feasible advantageous in addition to conventional culture technique.

Objective: To compare the BACTEC MGIT 960 culture system with LJ culture medium for recovery of Mycobacterium tuberculosis among the retreated patients.

Method/Material: Total 199 retreated TB cases were included in this study. Sputum samples from these patients were digested and decontaminated with NaOH-NALC citrate solution. Inoculation was performed into the MGIT tube (containing 7.0 ml of modified MB 7H9 broth base) and onto the LJ medium. Staining of smears was performed for fluorescent microscopy.

Results: Among the 119 retreated patients, 90 were found to be smear positive and 29 to be smear negative. The isolation of Mycobacterium tuberculosis from the smear positive cases was 75 (83.33%) for the BACTEC MGIT 960 medium and 67 (74.44%) for LJ medium. The average detection time for smear positive cases was 7.48 days for BACTEC MGIT 960 medium and 23.65 days for LJ medium. The contamination in smear positive cases was 8(8.88%) and 6(6.66) for the BACTEC MGIT 960 medium and LJ medium respectively.

Similarly, the isolation of Mycobacterium tuberculosis from smear negative cases was 6(20.68%) for the BACTEC MGIT 960 medium and 2(6.89%) for LJ medium. The average detection time for smear negative cases was 15.5 days for BACTEC MGIT 960 medium and 23.65 days for LJ medium. The contamination in smear negative cases was 3(10.34%) and 2(6.89%) for the BACTEC MGIT 960 medium and LJ medium respectively.

Conclusion: BACTEC MGIT 960 system is rapid and sensitive than conventional LJ method therefore, can be used in the routine mycobacteriology laboratory.

Keywords: MGIT, Re-treatment
7. DETECTION OF Mycobacterium tuberculosis COMPLEX AND ITS RESISTANCE TO ISONIAZIDE AND RIFAMPICIN BY PCR BASED GENOTYPE MTBDR PLUS ASSAY

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Introduction: The diagnosis of multi-drug-resistant tuberculosis (MDR-TB) is based on laboratory tests, usually culture and drug susceptibility test (DST) on solid or liquid media takes weeks to month. Rapid molecular methods are available for detecting drug resistant TB. We used GenotypeØ MTBDRplus assay, a multiplex PCR and reverse hybridization assay for detecting M. tuberculosis complex as well as mutations in the rpoB-, katG and inhA genes.

Objective: To address the urgent need for improved and accelerated MDR diagnostic and to show the feasibility to perform such a test in a developing country.

Methodology: 1st round 350 DOTS PLUS patients (Cat II treatment failure) registered from Sepi 05 to Sepi07 were cultured on LJ media. Positive cultures which were identified as M. tuberculosis complex were performed DST by conventional proportional method. The GenotypeØ MTBDRplus assay was performed exactly to the instructions of the manufacturer. All discrepant results were repeated on both methods.

Result: Out of 350 patients, 313 were culture positive and 299 were identified as M. tuberculosis complex and 14 as MOTTs. Out of all 299 TB strains 13 (4.3%) were found to be susceptible, while 195 (65.2 %) were resistant to all four first line drugs.

True susceptible to RMP 22 (7.4%) strains were found with both methods and of the 277 correct resistant strains 271 (sensitivity 97.8%) are detected by conventional DST and 272 (sensitivity 98.2%) by GenotypeØ assay, while from 284 correctly resistant to INH strains, 280 (sensitivity 98.5%) were detected by conventional testing and 258 (sensitivity 90, 8%) are detected by the GenotypeØ assay.

Mutations in the inhA gene were found to be 44; three of these mutations were accompanied by mutations in the katG gene. 41 (14.4%) contributed to the diagnosis of INH (low level) resistance additionally, while through mutations in the katG gene 217 (76.4%) (high level) resistance was detected. 276 true MDR strains were identified in this study, of which 269 (97.5%) were identified correctly by conventional DST, while 247 (89.5%) were detected by the GenotypeØ assay.

Conclusion: GenotypeØ assay reduces the time to get DST results for RMP and INH to one day. To detect RMP resistance both test systems are equivalent with a sensitivity of about 98%. The two genes chosen to detect resistance to INH (katG and inhA genes) cover about 90% of the total INH resistance.

8. THE IDENTIFICATION OF MYCOBACTERIUM TUBERCULOSIS COMPLEX AND NON MYCOBACTERIUM TUBERCULOSIS (NTM) AMONG THE PATIENTS REGISTERED IN DOTS PLUS PROGRAMME IN NEPAL.

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Introduction: The DOTS PLUS programme is a pilot project for the treatment of Cat II Treatment failure cases and DST proved MDR TB cases. This is the first pilot project implemented in Nepal after approval of GLC. The programme is running since Sep 2005. The drugs used in this programme are called second line drugs. The regimen is standardized treatment for all registered cases.

Objective: To determine the prevalence of the M. tuberculosis and Non Tuberculous Mycobacteria (NTM) among the DOTS Plus patients.

Methodology: From 350 cases, registered in the period indicated, initial sputum samples of 349 cases were received and processed for smear and cultur in the National TB Reference laboratory GENETUP. Positive cultures are tested for TB-first line drug susceptibility on the solid medium and by molecular based Hain GenotypeØ MTBDRplus assay identifying also M. tuberculosis-complex. Identification tests of NTM were done by GenotypeØ MTBDR-CM assays.

Results: Out of 349 initial sputum samples 313 (89.4%) were culture positive. with 299 (95.5%) identified as M. tuberculosis-complex and 14 (4.5%) were NTMs, among them 3 M. fortuitum, 1 M. abscessus, 1 is scrofulaceum and 9 cases of M. intracellular. All 3 M. fortuitum were eliminated under treatment (fluorochinolone component), one patient excreted later M. intracellular. From the remaining 11 patients in, 8 the same NTM was isolated several times. Together with clinical signs all of them are supposed to have a mycobacteriosis.

Conclusion: Not all the registered DOTS PLUS patients suffer from TB; however all are being treated with standardized second line drug regimen. A mycobacterioses (defined as: Several times isolation of the same NTM from the same patient and according clinical signs) need a modified, effective treatment rather than running DOTS PLUS regimen.
Recommendation: Identification tests for NTM and a strict follow up for these patients is strongly recommended in coming future. If the diagnosis of a mycobacteriosis becomes obvious, the treatment needs appropriate adjustment.

9. RESTRICTION FRAGMENT LENGTH POLYMORPHISM ANALYSIS OF MYCOBACTERIUM TUBERCULOSIS ISOLATES IN NEPAL USING PCR-LABELLED IS6110 PROBE

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Introduction: Restriction Fragment Length Polymorphism (RFLP) based on IS6110 element polymorphism remains the standard strain typing method for the molecular characterization of M. tuberculosis isolates.

Objectives: The aim of the study was to study genetic heterogeneity among M tuberculosis isolates from Nepal by IS6110 polymorphism based RFLP analysis.

Methodology: IS6110 polymorphism was analyzed among 59 isolates of M. tuberculosis from patients attending the two distinct clinics at Bhaktapur (NTC) and Kalimati (GENETUP) of Kathmandu valley. Cultured isolates were harvested and processed for further analysis at Mycobacterial Research Laboratory. The chromosomal DNA was extracted and restricted by PvuII, transferred on to nylon membrane and hybridized with PCR produced DIG labeled 245bp long IS6110 probe.

Results: On the basis of number of copies of IS6110, the isolates were classified into 5 groups, (i) 7 percent isolates lacked IS6110 element; (ii) 5 percent showed single copy; (iii) 15 percent showed 2-5 copies; (iv) 39 percent showed 6-12 copies and 34 percent showed 13-17 copies of IS6110 in their genome. The heterogeneous distribution of IS6110 copy number was observed between Aryans and Mongols racial groups of patients. Excluding isolates with one copy or no copy of IS6110, 23 % of isolates were clustered. Seventy three percent of isolates showed high copy number (e16) of IS6110.

Conclusion: DNA fingerprinting based on IS6110 polymorphism was found to be discriminating for high copy numbered strains thus could be useful to study molecular epidemiology of tuberculosis in Nepal.

Keywords: M tuberculosis; RFLP IS6110

10. THE UTILITY OF POLYMERASE CHAIN REACTION (PCR) IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS

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Introduction: Early diagnosis is one of the most important steps in the management of tuberculosis. Direct smear examination with Zieha-Neelsen (ZN) staining is cheap and easy to use, but of low sensitivity. Chest X rays, used for the diagnosis of smear- negative TB, risks high level of over diagnosis. Major advances in molecular techniques, which rapidly identify mycobacterial DNA in sputum, may overcome these obstacles.

Objectives: There has been no reported data on performance of PCR in a highburden, low resource setting like Kanpur city, India. The study involved cross-sectional blinded assessment of the diagnostic value of polymerase chain reaction (PCR) on 54 suspected cases of pulmonary TB, against sputum smear microscopy by Zeihl- Neelsen staining and culture by LJ method.

Methodology: Sputum specimen were collected from 54 TB suspects enrolled at Dr M. L. Chest Hospital, Kanpur and processed for detection of Mycobacterium tuberculosis by ZN smear, culture on LJ media and PCR tests. The sensitivity and specificity of PCR was compared to those of the conventional diagnostic techniques.

Results: Of the 26 PCR positive specimens, 76.9%(20/26) were culture ñpositive, 46% (12/26) were smear ñpositive, 30.8% (9/26) were smear ñnegative and culture ñpositive, and 23% (6/26) were both smear and culture negative. Among the 28 PCR negative specimens, 22(78.6%) were both smear and culture negative. The sensitivity, specificity , positive predictive value and negative predictive value PCR based on AFB culture were 100%, 82%, 77% and 100% respectively. The mean detection time for M. Tuberculosis was 24.03days by LJ medium culture, and less than one day by PCR test.

Conclusion: PCR has a high sensitivity and specificity. It is time saving considered the time needed to wait for microbiological culture results, which may causes delay in starting treatment, especially in sputum negative cases. However cost effectiveness studies and operational studies are required to support evidence - based decision of introducing PCR for TB control in high ñburden environments.

Key Word: M tuberculosis, PCR
11. MOLECULAR GENOTYPING OF MYCOBACTERIUM TUBERCULOSIS TOWARDS FUTURE CONTROL OF TUBERCULOSIS

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Introduction: There is a need to have information about prevalent genotypes in a particular area so that transmission trends could be monitored over a period of time.

Objectives: Present study aims to identify genotypes of M tuberculosis isolates from Jajm, Kanpur India and to gain knowledge about prevalent spoligotyping bases families in this region.

Methodology: Patients were screened from a selected regular OPD service in Jajm, Kanpur over one year period. Inclusion criteria were patients with productive cough of more than 3 weeks duration. Smear microscopy was done at Dr ML Chest Hospital, Kanpur and culture, sensitivity and spoligotyping were done at National JALMA Institute, Agra. A total of 100 patients of pulmonary TB suspects were included, out of which 48 were positive for AFB smear and 52 were smear negative. A total of 56 were culture positive for M Tuberculosis.

Results: 22 spoligotypes were obtained, 20 isolates were clustered into 6 shared type-STI/Beijing (14.28%). ST26/CASI_Del (14.28), ST25/CASI_Del (5.7%), ST346/U (5.7%). ST236/EA15 (5.7%), ST53/T1 (5.7%) and one orphan type to CAS and X3 each and one to S family.

Conclusion: Though the study awaits final analysis for sensitivity patterns and associated clinical attributes, we have found significantly higher incidence of highly resistant Beijing strain which highlights the need to re-look at our current strategies for tuberculosis management to prevent the upcoming outbreak of resistant Beijing strain.

12. A PILOT STUDY REPORT OF DRUG RESISTANCE SURVEILLANCE (DRS) - ANDHRA PRADESH


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Introduction: Drug resistant tuberculosis has frequently been encountered in India and its presence has been known from the time anti-tuberculosis drugs were introduced for the treatment of tuberculosis. Multidrug-resistant tuberculosis (MDR-TB), defined as resistance to at least isoniazid (INH) and rifampicin (RMP), is considered a threat to TB control. Implementation of DOTS ensures high cure rates and prevents MDR. Based on the above background a pilot study was carried out to implement Drug resistance surveillance study in Andhra Pradesh.

Objectives: To conduct a population-based state wide survey of anti-tuberculosis drug resistance

Methodology: Sputum samples were collected from selected designated microscopy centers through out the state based on the cluster sampling method recommended by WHO. Drug susceptibility testing of Mycobacterium tuberculosis samples isolated from the cultures of newly registered and retreatment sputum smear-positive cases during 2007.

Results: During the study, 100 sputum-positive cases were registered and analyzed. Of these, 91 were found positive on LJ culture, 6 were contaminated and 3 were culture negative. All the culture positive isolates (n=91) were tested for drug susceptibility testing of them 61 were new and 30 were re-treatment sputum positive cases. INH mono resistance was found in 6.5 % (4) of new and 20% (6) of re-treatment cases. MDR was present only in 1.6% (1) of new and 13.3% (4) of re-treatment cases.

Conclusion: The prevalence of MDR-TB is low in new sputum positive cases when compared with re-treatment

Keywords: MDR TB, DRS, DOTS

13. COMPARISON OF VARIOUS METHODS OF TUBERCULIN TEST READING - Visual method, Palpatory method, Ball point pen method and New Scale technique

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Introduction: For reading Tuberculin test various methods like Visual method, Palpatory method, Ball point pen method are used. Using these methods various inter-observer variation and even intra-observer variations are noted. A New Scale technique of reading tuberculin test has recently been described by Jai Kishan et al (2003) in which the scale is slid at an angle using little force and the scale automatically stops at point where induration begins. It was found to be simple like Vsual method, Palpatory method, Ball point pen method and even intra-observer variations are noted. A New Scale method and New Scale technique

Material and Methods: 0.1ml of one TU of PPD RT 23 was injected intra-dermally over flexor aspect of forearm using

tuberculin syringe with 26G needle and test was read after 48-72 hours using visual method, Palpatory method, Ball point pen method and new Scale technique. The date was statistically compared.

Observations: Induration size was grouped as 0-4, 5-9, 10-14, 15-19 and >20mm. When different methods of measuring the induration were compared with each other, statistical difference in distribution of number of children among different induration categories was significant between Scale method Vs Visual method. However differences between Scale Vs Palpatory, scale Vs Ball point pen method and Ball point pen method Vs Palpatory method were not statistically significant.

Conclusion: Scale method described by Jai Kishan et al can be used as a routine for measuring induration of tuberculin test. It has advantage of being simple and donít lead to soiling of skin or injury to skin due to ink as observed in Ball point pen method.

14 RAPID DIAGNOSIS OF MULTI DRUG RESISTANT TUBERCULOSIS (MDR TB) BY MICROSCOPIC OBSERVATION OF DRUG SUSCEPTIBILITY TEST (MODS)

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Introduction: The microscopic-observation drug-susceptibility (MODS) assay for the detection of tuberculosis and multidrug-resistant tuberculosis, directly from sputum, relies on the principle of cord formation by M.tuberculosis while growing in liquid medium. The cording can be observed by visualizing the inoculated medium in tissue culture plates under an inverted microscope. We have attempted to study the efficacy and rapidity of MODS in comparison with LJ for diagnosing MDR TB.

Methods: TB patients registered under a DOTS clinic (LEPRA Society-Blue Peter Research Center) in the state of Andhra Pradesh in India have been studied. Two sputum specimens from each patient were simultaneously inoculated on to LJ slopes and liquid medium dispensed in tissue culture plates as per the standard methods. Each inoculated specimen is followed till positive growth on LJ slopes and/or observation of cording in the tissue culture wells occurs. The time taken for positive cultures by both the methods was recorded. The culture positivity and turn around time for MODS and LJ cultures were compared.

Results: Out of 50 patients studied, 70% yielded positive cultures by both the methods. Out of the 35 M.tuberculosis isolates, 15 were shown to be MDR and 20 were susceptible to all drugs by both the methods. The average time taken for LJ for diagnosing MDR was 56 days where as MODS recorded an average time of about 11 days.

Conclusion: Our observations suggest that MODS could be a sensitive diagnostic technique for MDR TB, which can yield faster results when compared to conventional LJ based methods, which in turn has an influence on initiating early MDR treatment.

Keywords: diagnosis, MDR TB, rapid cultures, MODS

15. EVALUATION OF FLUOROCHROME STAINING TECHNIQUE AT ROOM TEMPERATURE AND AT 37 C TO DETECT ACID FAST BACILLI IN DIRECT SPUTUM

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Introduction: Tuberculosis is presenting new challenges as a Global Public Health problem especially at a time of increasing threats due to HIV infection, Multi-Drug Resistant and Extensively Drug Resistant strains of Mycobacterium tuberculosis. The most reliable diagnosis of pulmonary tuberculosis, bacteriological diagnosis, is made chiefly by sputum microscopy and sputum culture. Microscopic observation of Mycobacterium tuberculosis in sputum smears is still the mainstay of tuberculosis diagnosis in resource-poor countries. Conventional Fluorochrome staining technique is time saving and sensitive compared to Ziehl-Neelsen staining but doing the staining at 37 C can further increase its sensitivity. In the developing countries like Nepal where there is high burden of disease and quick need of screening of TB, Fluorochrome staining at 37 C could be the effective with its increased sensitivity.

Objective: To Evaluation of fluorochrome staining technique at room temperature and at 37 C to direct acid fast bacilli in direct sputum.

Materials and Methods: Sputum samples were collected from a total of 300 patients with clinically suspected TB patients. Two sets of direct smears were prepared. One set was stained...
with Fluorochrome staining technique at Room temperature and other at 37 C. Control smears were used with each day's staining. All sputum samples were processed by the Modified Petroffis Method for culture on two slants of LJ media. The Organisms were then identified by standard Biochemical tests.

Result: A total of 300 direct sputum smears were stained and evaluated at each fluorochrome staining techniques at Room temperature and at 37 C. Sixty three (21%) were positive for AFB by Fluorochrome staining techniques. All 63 (100%) of these smears were positive when stained with Auramine at 37 C. In contrast, only 55 (87.3%) were positive when stained with conventional Auramine stain at Room temperature. Thus, 12.7% of direct sputum smears were positive only with staining at 37 C whereas, 1 (0.4%) was positive only when stained at Room temperature. Of the 55 positive smears by both methods, 32 (58.2%) had equal numbers of AFB on both stains, 17 (31%) had more AFB on the smear stained at 37 C, and 6 (11%) had greater number of AFB on the smear stained at Room temperature. Of the 300 specimens cultured for Mycobacterium tuberculosis, Twenty two (7.3%) showed contamination and were excluded from analyzing the diagnostic process. The Validities of the Fluorochrome staining techniques at room temperature and at 37 C using culture as the gold standard for tuberculosis diagnosis. The false positive rates of Fluorochrome staining techniques at Room temperature and at 37 C were found to be 4.2 percent and 4.2 percent respectively. The false negative rates of Fluorochrome staining techniques at Room temperature and at 37 C were found to be 32.8 percent, and 23 percent respectively.

Conclusion: Fluorescence microscopy has proven decidedly more effective than the Ziehl Neelsen method and more easily performed. In the present study, fluorochrome staining at 37 C increased smear positivity by 12.7% over the conventional fluorochrome staining method. Staining at 37 C enhances the detection of AFB when compared with conventional staining at room temperature. Moreover results showed that staining at 37 C, helps in better visualization of greater number of AFB in our study as 31% of the smears positive by both staining methods show greater quantities of AFB when stained at 37 C. The validity of the fluorochrome staining at 37 C compared to staining at room temperature using culture as gold standard showed increase in sensitivity. So, the increase in smear sensitivity could contribute to quicker isolation and treatment of the infected patients. Our study indicates that the fluorochrome staining at 37 C adds substantially to the sensitivity of direct microscopy, without much extra input. Staining of primary specimen smears with fluorochrome staining at 37 C appears to be more sensitive than staining at room temperature. Therefore, should be used for routine staining of direct smears for AFB.

16. SPOTS AND MORNING SAMPLES SEEM TO YIELD SIMILAR RESULTS

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Sputum microscopy is one of the crucial components of TB control programme. To support the joint TB and leprosy control project at KORALEP; a well equipped laboratory was organized for sputum examination. It catered to the need of LEPRA Society joint project and later on recognized as a reference laboratory for the Orissa state, India. The LTs were already proficient in dealing with skin smear and sputum reporting being similar, there was no difficulty in providing quality sputum reports with some orientation. This study presents certain important aspects of both gross and microscopic observation on the samples from 1997 - 2000.

In the NTCP, the spot, morning and spot samples, identified respectively as A, B and C were collected from each patient. It is often difficult to get pure sputum and in some cases only saliva or mixture of saliva and sputum were available. Before microscopy as per the gross appearance, the samples were categorised as mucopurulent (mucus), saliva and blood tinged (blood). Following this the samples were smeared and stained by ZN stain and reported. The extent of positivity compared with the gross appearance and time of collection is given under.

In the year 1997, the positivity percentage of spot, morning and spot samples, identified as 3.1, 1.1 and 1.1 while that of blood were 7.3, 8.6...
and 6.2. The average of the samples spot, morning and spot for each mucous, saliva and blood is 12.1, 1.8 and 7.4% respectively. It seems morning sample has no advantage over the spot samples. The positivity seems to vary with the nature of material predominantly present in the sample. It is high in mucus, low in saliva and medium in blood. The positivity pattern is more or less similar in samples of 1997, 1998 and 2000 while the finding of 1999 samples fails to show any.

17. RATE OF SPUTUM CONVERSION DEPENDS ON THE GRADES OF POSITIVITY

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Abstract: Quality sputum microscopy is one of the important prerequisites for diagnosis of lung TB. As per the RNTCP guideline the positive sputum needs to be graded to indicate the density bacilli. It indicates the infective potential of a patient and hence of great public health importance. Can grading also indicate the prognosis of the disease in terms of sputum conversion rate with which risk of infection to the community members is related? To examine this aspect, the individual grades of sputum smears of both the category I and II were correlated with the sputum conversion rate of the corresponding group of patients.

The total number of patients treated from 1997 to 2000 in KORALEP joint TB and leprosy project is included in this analysis. Of the 1150 cases 921 belonged to category I and 229 to category II. Their sputum were collected, reported and graded as per the standard technique.

The sputum conversion rates of category I patients with a particular grade was calculated at the end of 2 months (Intensive phase) and at the end of 3 months (Extended intensive phase). Similarly for category II patients the rates are calculated at the end of 3 and 4 months. The cumulative conversion rates were also calculated for both the categories. This is the total number of cases who become negative at the end of extended intensive phases. The results are shown in the following table.

From the results it seems that percentage of conversion is low with higher grade of sputum positivity. Comparison of the results of category I and II shows that conversion rate is higher in category II compared to the corresponding grade of I. Hence, grading also has a prognostic implication.

| Cat - I |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
| Total samples | Grading | Neg. at 2 month % | Samples Examined | Neg. at 3rd month % | Cum. at 3rd month % |  |
| 190 | 1+ | 150 | 78.9 | 37 | 78.4 | 179 | 94.2 |
| 260 | 2+ | 191 | 73.5 | 66 | 78.6 | 243 | 93.5 |
| 473 | 3+ | 205 | 56 | 167 | 66.5 | 376 | 79.5 |
| 923 | 606 | 69.5 | 270 | 192 | 74.6 | 798 | 89 |

| Cat - II |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
| Total samples | Grading | Neg. at 2 month % | Samples Examined | Neg. at 3rd month % | Cum. at 3rd month % |  |
| 190 | 1+ | 150 | 78.9 | 37 | 78.4 | 179 | 94.2 |
| 260 | 2+ | 191 | 73.5 | 66 | 78.6 | 243 | 93.5 |
| 473 | 3+ | 205 | 56 | 167 | 66.5 | 376 | 79.5 |
| 923 | 606 | 69.5 | 270 | 192 | 74.6 | 798 | 89 |
Abstracts for Oral Presentation on TB/HIV Co-infection
(O/TBH/1-16)
1. TB IS THE LEADING CAUSE OF DEATH IN ONE CARE AND TREATMENT CENTER OF PLHA IN BANGLADESH

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**Issues:** Bangladesh is a low prevalent country with high-risk situation. The number of PLHA is constantly increasing and becoming a vital issue. Care and treatment sector for PLHA is at nascent stage in Bangladesh for its low prevalence, and is also facing different kind of stigma and discrimination. HIV presents a massive challenge to the control of tuberculosis (TB). Tuberculosis is one of the most common causes of morbidity and the leading cause of mortality in people living with HIV/AIDS (PLHA). Bangladesh ranks fifth among the TB high burden countries in the world.

**Description:** Ashar Alo Society (AAS) is a community based registered organization working for support, care and treatment of PLHA in Bangladesh. It started as a pioneer support group with 10 PLHA in 1998 with the assistance of UNDP and FHI IMPACT. Now the total beneficiaries (members) are 496 till 31 December 2007. Male 320, female 148, children 26, transgender 02. During the year 2005-2007 total 35 patients received TB treatment from one center of AAS in Dhaka where total members are 181 till 31 December 2007. Out of total 35 TB patients male 29 female 06. Mean age 32.5 yrs. Of them EPTB (21), smear positive PTB (03), smear negative PTB (11). Total 38 patients died during that period, of them 19 died due to TB. Other common sign/symptoms of different OIs are: Fever(57%), Diarrhoea (51%), Respiratory infection (28.1%), Oral candidiasis (57.8%), Skin infection (29.2%), PCP (5%), Herpes simplex (10%) etc.

**Lessons learned:** Diagnosis of tuberculosis is difficult in HIV positive patients since they often present with atypical symptoms. Sputum collection may not be possible even in patients with pulmonary involvement since a productive cough is not always present.

**Recommendation:** There is a need for enhanced collaboration between existing HIV/AIDS programmes and tuberculosis programmes to coordinate the response to HIV/TB, ensure a continuum of care for people with TB and HIV/AIDS.

2. CO-RELATION OF HIV & TUBERCULOSIS IN TERMS OF CLINICAL AND RADIOLOGICAL PRESENTATION WITH CD-4 COUNTS IN WESTERN PART OF RAJASTHAN

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**Introduction:** In India, estimated 40% of population is infected with tuberculosis as against 1% with HIV infection. HIV co-infection is strongest known risk factor for the development of tuberculosis disease. The fact is that tuberculosis kills more adults in the most productive age group in India than any other infectious disease. Unlike other opportunistic infections that occur at CD-4 cell counts < 200/cumm, active tuberculosis occurs throughout the course of HIV disease. As HIV related immunosuppression increases, the clinical pattern of TB changes with increasing number of smear negative and extrapulmonary tuberculosis cases. Thus clinicoradiological presentation depends upon the degree of immunosuppression.

**Objectives:** to know the prevalence & spectrum of clinicoradiological presentation of tuberculosis in HIV positive patients and find out correlation with CD4 cell counts.

**Methodology:** The present study was carried out at K. N. Chest Hospital, Dr. S N Medical College; Jodhpur, included indoor 153 HIV positive patients during Nov 2006 to Nov 2007. Written consent was taken with proper counseling. HIV sero-status was done in all the patients as per NACO guidelines. Routine blood tests, sputum examination for AFB & Culture, chest x-ray, USG, tuberculin test with 5 TU, were performed. FNAC, Biopsy, Fluid Cytology, Biochemistry were used to diagnose EPTB and CD 4 counts were performed.

**Results:** Out of 153,138 patients were diagnosed to have HIV-TB co-infection, among that 78.99% males and 21.01% were females. Pulmonary lesions were present in 82.61% patients; Extra-pulmonary alone in 17.39% and 53.62% had both pulmonary & Extra-pulmonary tuberculosis. 42.98% (49) had sputum smear positive for AFB whereas 57.07% were smear negative. Overall 50/138 (36.23%) had lymph node TB, followed by pleural (22.46%) & abdominal tuberculosis (19.57%). The most common presenting symptoms was cough (82.61%), followed by fever (68.12%), loss of appetite & shortness of breathlessness (52.17% & 42.75%) respectively. 79.73% of
pulmonary & Extra-pulmonary patients had CD4 cell counts <200/cumm.

Conclusion: Most of the HIV-TB co-infected patients were belong to productive age group of 21 to 40 yrs and were sexually active. Driving was most common occupation (28%) & females were housewives. This study highlights the higher prevalence of HIV & TB in patients who lack basic education and awareness. Patients with low CD4 counts (<200/cumm) had more incidence of Extra-pulmonary & pulmonary tuberculosis with atypical radiological presentation.

3. CHANGING PSYCHOSOCIAL PROFILE OF PEOPLE LIVING WITH HIV AND AIDS AND AFFECT OF TUBERCULOSIS ON THEM IN NORTH INDIA

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Introduction: HIV spread from urban to rural areas, from high risk to general population and from the permissive to conservative societies. Migration of labours, low literacy, stigmatization ñ all rampant in remote conservative societies-favour its stealthy percolation into the community.

Objectives: To assess the psychosocial profile and to know the affect of tuberculosis on PLWHA.

Methodology: This is a cross-sectional study. Those NGOís, Antiretroviral Therapy (ART) centre and PLWHA networks who agreed to participate in the study constituted the study units. All PLWHA who match the inclusion criteria were considered. Criteria were that he/she must be resident of that area, more than 18 years of age, aware of their HIV status and willing to participate. So four hundred and six PLWHA full filled the criteria. The period of study was six month i.e. 20th Dec, 2007 to 19th June, 2008.A pilot tested structured interview schedule were filled. The analysis was done with SPSS window 12 version.

Results: Out of four hundred and six PLWHA 50.2% were male and 49.8% females. Majority of PLWHA were young (25-40yrs) , 76.8% rural residents lower middle class (30%), 32.5% illiterate, 22.2% alcoholics,12.3% labourer, 66.5% migratory population, 67% know that source of infection is unprotected sexual intercourse, 68% wanted to repent, only 15.3% discriminated, 38.4% depressed according to Geriatric Depression Scale (GDS) score, 55.2% on sexual abstinence

36.9% have tuberculosis as co-infection .72% having tuberculosis feel loss of energy, 44.4% drop their activities and 10.7% show severe depression (GDS score 10-15)

Conclusion: Prevalence of discrimination has decreased. Tuberculosis causes severe depression in PLWHA.

Key words: PLWHA, Discrimination, Depression, Tuberculosis

4. PREVALENCE OF TUBERCULOSIS AMONG PEOPLE LIVING WITH HIV/AIDS (PLHAS) ñ A SOUTH INDIAN STUDY

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Introduction: With the advent of HIV, Tuberculosis has become an even more scare to the population than it has already been in terms of morbidity and mortality. Early diagnosis and treatment will be the only key thing to tackle this problem in a resource limited country like India where eradication of tuberculosis will be nearly impossible atleast in the near future.

Objectives: a) To find out the prevalence of tuberculosis in PLHAs, b)To find out the age and sex distribution, c)To find out the average CD4 count at the time of diagnosis.

Methodology: About 15,000 PLHAs attending the various ART (anti retro viral) clinics distributed throughout Tamil Nadu (a large south Indian state) were taken up for the study and were investigated for the presence of Tuberculosis. Their CD4 counts were measured by flow cytometry. Their age and sex distribution were determined and the results tabulated.

Results: Out of the 15,000 PLHAs who participated in the study, about 13% had tuberculosis. Majorities are males and the average CD4 count at the time of diagnosis was 110.

Conclusion: The prevalence of Tuberculosis is very low when compared to the national statistics. The average CD4 count is also very low which means that the PLHAs are subjected to an increased risk of other opportunistic infections besides TB. TB in HIV is going to pose many diagnostic dilemmas which mean that we have to resort to modern methods to diagnose TB in PLHAs.

Keywords: Tuberculosis, PLHAs, CD4 count, Prevalence
5. TB-HIV CROSS REFERRALS THROUGH PUBLIC PRIVATE PARTNERSHIPS

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Introduction: The integrated counseling and testing Center (ICTC) is envisaged as the center of hub of all HIV related services including TB-HIV. The cross referrals between ICTCs and Designated Microscopy Centers (DMC) was poor in 2005. In order to contain TB in HIV positive people, cross referrals have to be improved between ICTCs and DMCs.

Objectives: The goal of TB-HIV Coordination programme is reduction in TB-related morbidity in people living with HIV / AIDS while preventing further spread of HIV and TB in the community through increased cross referrals and treatment of TB cases.

Methodology: Non Governmental Organizations (NGOs) were identified and entrusted recruitment of out reach workers (ORWs) and monitoring of their activity. The ORWs are either TB cured or HIV infected people who are educated at least upto seventh class to ensure that they can read and write. They were placed in 2006 in 250 centers across the state through NGOs. LEPRA Society, a nodal NGO given training responsibility. The counselors and ORWs were given modular training in TB-HIV. They have established linkages with DMCs and communities through outreach activities.

Results: There is almost three times increase cross referrals from ICTCs to RNTCP and RNTCP to ICTCs and corresponding increase in No. of positives detected, contributing about 40% of cross referrals in the Country.

Conclusion: Public private partnership has shown good out reach into the community with increased usage of services by the community and correspondingly decreased TB - HIV burden.

Keywords: Cross Referrals, ORWs, PPP model

6. CO-INFECTION WITH HUMAN IMMUNODEFICIENCY VIRUS AND TUBERCULOSIS IN BANGLADESHI PATIENTS

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Introduction: Asia has had historically high levels of tuberculosis (60% of the global total) and has experienced a marked rise in HIV seroprevalence (22% of the global total) in key subpopulations of these highly populous nations. Thus, co-infected patients are a challenge for practitioners and public health workers alike. The incidence and prevalence of co-infection of human immunodeficiency virus (HIV) and tuberculosis (TB) differ due to region, gender, ethnic and socioeconomic factors.

Objectives: The aim of our study was to estimate the relative frequency of co-infection of HIV in TB. And to identify the risk factors associated with such co-infection.

Methodology: Using a descriptive cross sectional study design a total of 120 consecutive diagnosed TB patients, attending the Out Patient Department of MBMC Hospital, Uttara, Dhaka, during the period of July 2007 to June 2008 were included. Data were collected using an interviewer administered structured questionnaire. TB was diagnosed by microscopic examination of sputum for Acid Fast Bacillus by Ziel-Neelson staining. The subjects were screened for serum anti-HIV antibodies to Type 1 or Type 2 HIV by immunochromatography device (HIV 1/2 Ultra Rapid Test Device, ACON Laboratories Inc., San Diego, CA, USA) according to manufacturerís instruction.

Results: The mean (+SD) age of the subjects were 31±14 years (range 16-70). Among the subject 68 (56.7%) were male and 52 (43.3%) were female. The subjects were from diverse occupation: garment worker 33 (27%), housewife 24 (20%), service holder 19 (16%), business 16 (13%), day labourer 12 (10%), domestic helper 4 (3%) and unemployed 12 (10%). Detailed personal history revealed that 4 (3%) had history of risky behaviour (4(3%) heterosexual, 0(0)% commercial sex worker, males having sex with males (MSM) 0(0%), and injecting drug users (IDUs) 0(0%)). None were found positive for Anti-HIV antibody. The prevalence of HIV co-infection in TB was 0% in this study group.

Conclusion: The relative frequency of co-infection of HIV and TB in this study was 0%. Although the prevalence of HIV in active adults is relatively low (as per previous reports on high risk population 0.9%), Bangladeshi TB patients have a high risk due to their potential risky behaviour and geographical
location. Therefore further follow up study with large sample size should be undertaken on a priority basis.

Keywords: human immunodeficiency virus (HIV), tuberculosis, co-infection

7. HIV AND TB: THE SITUATION IN A TERTIARY CARE HOSPITAL IN UTTARANCHAL

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Introduction: In India, about 5.1 million people are infected with HIV; about half of them are co-infected with M. tuberculosis, approximately 0.2 million of these co-infected persons will develop active tuberculosis each year in association with HIV infection. In contrast to the western countries, where Pneumocystis pneumonia is the commonest AIDS defining illness, in developing countries, TB is the most common opportunistic infection. HIVTB co-morbidity has far more detrimental effects than HIV or TB occurring singly. The direct and indirect costs of illness due to TB and HIV are enormous, in developing countries and have a catastrophic impact on the economy of the developing world. No such reports are available from Uttaranchal, thus this study was conducted in Himalayan Institute of Medical Sciences.

Objective: To study the trend of HIV seropositivity in patients of tuberculosis along with demographic profile, clinical features and associated complications, in patients of HIV-TB co-morbidity.

Design: Patients of tuberculosis attending the out patient department of Himalayan Institute of Medical Sciences (HIMS),a post graduate institute and a large tertiary care centre in Dehradun. HIV seropositivity was assessed among all tuberculosis patients (pulmonary &extra-pulmonary), diagnosed between January 1999 and August 2005 attending the out patient department of HIMS.

Result: HIV seropositivity in tuberculosis patients rose from 1.19% in 1999 to 4.19% in 2005. Out of total 42 HIV seropositive patients, 71.42% were males, 88.09% were married, and 69.04% belonged to rural population. Most common route of HIV transmission was heterosexual (66.67%) followed by blood transfusion (16.67%). 64.28% of the patients had pulmonary tuberculosis and 35.71% had extra-pulmonary tuberculosis. Sputum was positive for Acid Fast Bacilli in 40.74%. Fever was the most common (83.33%) symptom and oral candidiasis (40%) was the most commonly associated complication.

Conclusion: Although overall HIV prevalence rates in tuberculosis patients were lower in Uttaranchal as compared to other areas, the rapidly rising trend over the last six years makes this state highly vulnerable to HIV infection. Hence, routine screening of all tuberculosis patients is recommended because tuberculosis is the most common presentation in all the stages of HIV infection.

Key Words: HIV, Tuberculosis, Extra-pulmonary tuberculosis

8. TB/HIV CO-INFECTION STATUS AMONG THE NEWLY DIAGNOSED TB PATIENTS: A STUDY FROM EASTERN NEPAL

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Introduction: Tuberculosis (TB) is a leading public health problem worldwide particularly in the developing countries. The HIV epidemic has increased the global tuberculosis burden. Estimating the proportion of HIV infection among TB cases can act as early warning system for the spread of TB due to HIV in the country.

Objectives: The objective of the study was to know status of TB/HIV co-infection cases among the TB patients at DOTS clinic in BPKIHS, Dharan, Nepal.

Methodology: Three Hundred newly diagnosed TB cases attended to BPKIHS DOTS clinic were tested for HIV.

Results: Among 300 newly TB patients, 14 (4.7%) patients were HIV positive. All were males. The study has shown very high (4.7%) TB/HIV co-infection.

Conclusion: This is an alarming situation. Similar operational research can be conducted in different parts of Nepal to know the exact scenario of TB/HIV co-infection, which is necessary for formulating national policy & guidelines for TB/HIV control in the country.

Keywords: TB & HIV Co-infection, TB, HIV, Nepal

9. CLINICAL PRESENTATION OF TUBERCULOSIS IN HIV POSITIVE PATIENTS IN RELATION TO CD4 COUNTS

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Introduction: Tuberculosis is the most common opportunistic infection in patients with HIV in our part of world and there is
a two-way relationship between these two diseases. Clinical presentation of TB in HIV infected persons varies considerably depending upon the severity of immunosuppression.

**Objectives:** The study was conducted with an aim to assess and evaluate various clinical presentations of tuberculosis in HIV positive patients and compare these presentations in relation to CD4 counts.

**Methodology:** The present study was a prospective observational study conducted in the department of medicine, Kasturba Medical College (KMC), Mangalore from September 2004 to July 2006. 100 proven HIV positive patients with tuberculosis, who satisfied the inclusion criteria, were the subjects of this study. NACO and RNTCP guidelines were used for diagnosis of HIV and tuberculosis.

**Results:** The age of the study population ranges from 22-54 years (mean age 36 years) and maximum subjects were in the age group 31-35 years. Male:female ratio was 3.5:1. Fever was the most common symptom at presentation followed by weight loss, cough, loss of appetite, dyspnea and hemoptysis.

Only 25% of the patients had Pulmonary Tuberculosis (PTB) and 75% had extrapulmonary tuberculosis (EPTB). Among the extrapulmonary tuberculosis, majority (30%) had Lymph node TB followed by disseminated TB (17%), tubercular pleural effusion (12%), miliary TB (6%), tubercular meningitis (4%), intestinal TB (3%), and TB pericardial effusion (3%).

Among the patients with PTB, 65% were sputum smear negative for Acid Fast Bacilli (AFB). Upper lobe infiltration was evident in patients with high CD4 count. As the CD4 cell count declined, chest x-ray showed middle and lower lobe infiltration.

**Conclusion:** Clinical presentation of tuberculosis remained highly dependent upon the CD4 cell count. In HIV patients with higher levels of CD4 count, the clinical presentation of tuberculosis remained fairly similar to those without HIV infection. However, in more immunocompromised patients, as evidenced by low CD4 counts, atypical presentation of tuberculosis was more evident. Hence there should always be a high index of clinical suspicion for the accurate and timely diagnosis of tuberculosis in HIV positive patients.

**Keywords:** HIV/AIDS, Tuberculosis, CD4

**10. IMMUNE STATUS OF TB/HIV CO INFECTED NEPALESE PLHAS**

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**Introduction:** Coinfection with tuberculosis in HIV infected individuals is one of common problem in developing countries like Nepal.

**Objectives:** To study the immune status of TB/HIV co infected Nepalese attending NPHL for monitoring immune status.

**Methodology:** Sputum and blood samples were taken after verbal informed consent of PLHA volunteers. Sputum sample was taken and Zeihl ñ Neelson staining was performed for laboratory diagnosis of Tuberculosis. The CD3, CD4 and CD8 T cells in blood was counted by FACS count, BD, USA strictly following the users manual to evaluate the immune status.

**Results:** A total of 1948 HIV positive volunteers were participating in the study, among which 65.8% were males and 34.2% were females. Among the total subjects, 33.7% (656/1948) were TB/HIV co-infected, of which 55% were males and 44% were females. Highest co-infection was observed in age group 30-39 years (16.2%), followed by 20-29 years (10%) and the lowest co-infection was observed in age group 15-19 years (0.2%). Lower CD4 count was observed among TB/ HIV co-infected subjects. In TB/HIV co-infected subjects, 81.9% had CD4 count of less than 200/mm³, 15.5% had the count of 200-500/mm³ and only 2.6% had the count of more than 500/mm³ (P < 0.05). Among the TB/HIV co-infected individuals, 40.1% had the CD8 count 500-1000/mm³ whereas 29% had the count of less than 500/mm³ (P < 0.05). Decreased CD4/CD8 ratio was associated with TB/HIV co-infection (P < 0.05). Among the total TB/HIV co-infected subjects, 95.6% had CD4/CD8 ratio of less than 0.5, 4.2% had 0.5-1.0 and 0.2% had more than 1.0.

**Conclusion:** The study revealed that most of the subjects with TB/HIV subjects were in poor in immune condition and progressed to AIDS in terms of CD4 count when they attended for monitoring immune status.

**11. HIV/TB CO-INFECTION AMONG PEOPLE LIVING WITH HIV/AIDS (PLHA) IN MID-AND FARRWESTERN DISTRICTS OF NEPAL**

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**Introduction:** HIV epidemic in Nepal is a major public health concern and Tuberculosis (TB) is endemic since decades. The emergence of TB in people living with HIV/AIDS (PLHA) as one of the most common co-infection is quite evident, leading to frequent fatal out-breaks. Earlier detection of either of the infection is mandatory for better health prospects for PLHA.

This is a retrospective data review for HIV/TB co-infection among HIV positive clients diagnosed positive at VCT centres run by Nepal STD & AIDS Research Center (NîSARC) in selective districts between the period of 2004 -2008.

**Objectives:** To find out the co-infection of TB among PLHA in the Mid and Far-Western Nepal.

**Methodology:** The clinic data were reviewed and analyzed for the purpose of identifying TB co-infection cases among...

**Results:** During the four review periods, HIV positive clients identified were 180, 248, 166 and 93 respectively. Out of these clients, the number of TB cases screened and tested was 2 (1.1%), 7 (2.8%), 15 (9.0%) and 11 (11.8%) respectively.

An increasing trend of TB as one of the most common opportunistic co-infection amongst HIV positive clients was observed.

**Conclusion:** HIV/TB co-infection among the PLHA is quite significant. The diagnosis of HIV as well as TB should be made at the earliest possible to combat serious consequences of HIV/TB co-infection.

### 12. HIV CO-INFECTION AMONG MDR AND XDR-TB PATIENTS IN SOUTH INDIA A TREND


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**Background:** Government Hospital of Thoracic Medicine, Tambaram, Chennai is the largest referral centre for managing patients with chronic tuberculosis and HIV disease in South India. It is felt to provide vital information, utilizing the data available from the electronic database of the Hospital information system, prevalence of HIV co-infection among MDR and XDR-TB patients and its trend during last four years.

**Objectives:**
- To study the prevalence of MDR-TB and XDR-TB among chronic TB patients, either treated or on treatment without adequate response,
- To assess the HIV seropositivity among MDR and XDR-TB patients and
- To evaluate the trend of HIV co-infection MDR-TB patients.

**Methodology:** Chronic pulmonary tuberculosis patients, who had prior and or unsuccessful ant tuberculosis treatment for at least 6 months, were selected for the analysis. They were all subjected to HIV screening. Their sputum specimens were subjected to M. tuberculosis culture and drug sensitivity at Tuberculosis Research Centre, Chennai. The study period was 2004 to 2007.

**Results:** The data of 2927 chronic tuberculosis patients, assessed for HIV co-infection is presented. Mycobacterium tuberculosis was found in the sputum culture examination of 2161 (73.8%) patients. 1633 patients (55.8%) were found to expectorate M. tuberculosis resistant at least to one anti TB drug. MDR-TB was detected in 975 patients (33.3%) and among them 43 (1.5%) XDR-TB. HIV was found to co-exist with MDR-TB in 141 (4.8%) of 2927 patients studied. Two XDR-TB patients had HIV co-infection. The trend of HIV co-infection was observed among MDR-TB patients to the tune of 12.4%, 15.4%, 17.4% and 12.6% during 2004, 2005, 2006 and 2007 respectively.

**Conclusion:** Prevalence of MDR-TB was found to be high among chronic TB patients, which was essentially an acquired condition. There is a high trend of HIV co-infection (>12%) among MDR-TB patients. It would be appropriate to screen all the chronic TB patients for HIV co-infection apart from their sputa examined for drug resistant tuberculosis.

**Keywords:** HIV, MDR-TB, XDR-TB, Trend

### 13. MULTIPLE DRUG RESISTANT TUBERCULOSIS (MDR-TB) IN HIV POSITIVE PATIENTS FROM CHANDIGARH, INDIA

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**Introduction:** Tuberculosis is major health problem in developing countries like India. The problem is further compounded by emergence of MDR TB. Emergence of drug resistance isolates of M. tuberculosis highlights the need for continuous monitoring of drug resistance to antituberculous drugs.

**Objectives:** To estimate the prevalence of MDR TB in HIV sero-positive patients

**Methods:** A total of 410 patients suspected of tuberculosis who attended Chest/Medical out patient department of Nehru Hospital attached to PGIMER, Chandigarh were enrolled for the study. Sputum samples obtained were culture on Lowenstein Jensen media (LJ media) In case of Culture positive cases, antibiotic susceptibility testing for primary line anti TB drugs, was carried on to LJ medium by the proportion method. Five ml of blood was collected from these patients and tested for HIV as per standard method.
Results: Out of 410 Samples, 65 samples are culture positive and 61 are smear positive. 56 of these cultures were identified as *M. tuberculosis*. 33 patients of 410 were HIV positive. Of these HIV patients, 8 patients had grown *M. tuberculosis* and 37% were found to be MDR TB.

Conclusions: The drug resistance tuberculosis is rising in TB Patients and particularly in those which are HIV infected. Thus monitoring of drug resistance in *M. tuberculosis* isolates should be carried out routinely and need prioritization for success of national tuberculosis control programme.

Key words: *M. tuberculosis*, HIV, Drug resistance

14. ORIENTING HIV/AIDS HEALTH WORKERS ON TB: INITIATION OF COLLABORATIVE TB AND HIV ACTIVITIES

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Introduction: TB/HIV co-infection is one of the most emerging problems in the world. Though Bangladesh is still a low prevalent country for HIV epidemic, several risk factors and concentrated epidemic in some groups may increase HIV levels in the coming years. BRAC an NGO have been implementing community based DOTS programme in collaboration with national TB control programme covering 88 million population.

Objectives: To disseminate TB information among the HIV/AIDS and reproductive health workers, and emphasize on collaborative TB and HIV activities.

Methodology: Currently nationwide scale up of TB-HIV collaborative activities is being promoted and has been initiated in Bangladesh. Orientation sessions on TB were conducted with for the HIV/AIDS or reproductive health workers at district level. Dissemination of basic messages of TB and the relationship of TB and HIV were included in the sessions.

Results: In 2005, total 641, HIV/AIDS NGO workers were oriented on TB. In 2006 and 2007; total 1,311 and 2,520 were oriented respectively.

Conclusion: As initiation of TB-HIV activities, orientation of the HIV/AIDS health workers showed better result and found to be effective. National TB/HIV Coordination Committee has been initiated and emphasis given on strengthening coordination between NTP and the NASP. Linking VCT centers with TB is also under process. Improved collaboration between TB and HIV programmes should be ensured for significant public health gains and more effective control of TB among HIV infected people.

Keywords: TB/HIV

15. MONITORING TB IN HIV INFECTED PATIENTS THROUGH COMMUNITY BASED DOTS IN THENI DISTRICT, TAMIL NADU, INDIA


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Introduction: In India more than 60% of the reported AIDS cases are infected with TB, which can be treated with DOTS. However health facility-based DOT for all TB patients is impractical in most developing countries, often requiring patients to travel long distances to receive treatment. With the escalating epidemic of HIV it becomes necessary to intensify efforts in developing strategies for improving health care delivery for HIV patients co-infected with TB. An alternative method of delivering effective treatment to patient involves community participation. This paper describes the feasibility of employing community DOT providers for TB treatment delivery among HIV infected persons in Theni District, Tamil Nadu State.

Methodology: Operations research was carried out in an intervention project operated by 5 NGOs, spread over 10 PHCs. Two NGOs have government accredited DMCs with facilities for treatment and follow-up of cases treated by PHCs. Remaining NGOs refer cases to PHCs and follow them up. The project generates and updates database of TB patients registered in the programme. Data for this paper is generated from April 2006 - September 2007.

Results: Out of 582 patients recruited; 126 (22%) were HIV positive when diagnosed with TB. Forty patients (32%) had community DOT providers, selected by RNTCP or the NGO, at their request. Of the 40 DOT providers, 21 (53%) were females while more than half (n = 23, 58%) had previous experience of providing DOTS. Twenty-six patients (65%) reported that DOT providers observed them thrice a week during the intensive phase (IP) and continuous phase (CP). Thirty- three (83%) and 31 (78%) patients tested sputum negative at the end of IP and end of treatment respectively. Twenty-nine patients (73%) were reported as cured or treatment completed.
**Conclusion:** Contribution of community to TB care can prove to be an effective strategy in managing TB even among HIV infected population.

**Keywords:** TB, HIV, Community, DOTS

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**16. RESULTS OF SENTINEL SITE HIV SURVEILLANCE AMONG TB PATIENTS REGISTERED IN NEPAL NATIONAL TB PROGRAMME 2007**


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2 Regional TB Centre, Pokhara

**Objective:** During To determine the prevalence of HIV among TB patients and to monitor the trend of HIV prevalence overtime.

**Introduction:** Tuberculosis remains a significant public health problem while HIV prevalence is on the rise and currently considered as a concentrated epidemic in Nepal. TB and HIV are overlapping epidemics; TB is identified as a major cause of death among people living with HIV/AIDS.

**Methods:** Survey was conducted at five sentinel sites among consenting diagnosed/registered TB patients >15 year of age after counselling. Samples were tested for HIV using WHO recommended test kits. Positive tests were subjected to confirmatory tests. All records were kept confidential using coding system. Patients received post testing counselling. Data was analyzed using EPI ENFO software.

**Results:** A total of 996 patients were included in the survey (797 new, 190 with history of previous treatment, 9 unknown). Proportion of female TB patients in the survey was 33.7% while about 79.3% of the patients had pulmonary tuberculosis. Among patients for whom results were known 2.45% (24) were found positive for HIV (79% male).

Results of this survey are similar to previous survey conducted during 2001/02 (2.44%). However the prevalence of HIV has risen dramatically since the first and subsequent surveys carried out in the past (0% in 1993/94, 0.60% in 1995/96, 1.88% in 1998/99 and 1.39% in 1999/00).

**Conclusion:** Prevalence of HIV is steadily increasing among TB patients. All concerned public and private sector partners must ensure effective collaboration for TB and HIV control in Nepal.

**Topic C: Epidemiology Subtopic 10: Other Keywords**

Tuberculosis, HIV AIDS
Abstracts for Oral Presentation on Respiratory Diseases
(O/RDs/1-12)
1. PEAK EXPIRATORY FLOW RATE OF SCHOOL GOING RURAL CHILDREN FROM WARDHA DISTRICT, MAHARASHTRA

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Introduction: The peak flow meter is the useful instrument for routine monitoring the PEFR in healthy and asthmatic children. Studies relating PEFR and anthropometry among growing children are necessary in our country as the mosaic of Indian population spread over such a differing geography is varied and complex. The present study was designed to measure PEFR in rural school going children from Wardha district of Maharashtra state and to derive prediction formula for this population.

Materials & Methods: The PEFR was measured in 1078 healthy rural schoolchildren, living in Wardha district, Maharashtra using Mini-Wright peak flow meter. All measurements were obtained in the standing position and the best out of three trials was recorded. Anthropometric measurements, weight, height, and mid-upper-arm circumference (MAC) were recorded and body surface area (BSA) and body mass index (BMI) was calculated.

Results: Positive correlation was seen between age, height, weight and PEFR. The regression equations for PEFR were determined for boys and girls separately. The boys had higher values than the girls at all heights. The prediction equation for PEFR based on height was

1. PEFR (Female) = 3.64 height (cm) – 257.86  (R=0.47, R²=0.22)
2. PEFR (Male) = 4.7 height (cm) – 346.51  (R=0.62, R²=0.38)

Conclusion: PEFR is a reliable measurement, which can be used routinely and regularly in rural area for assessment of airway obstruction and prediction formula derived for use in this population.

2. PRICK TEST IDENTIFICATION OF COMMON ALLERGENS CAUSING UNITED AIRWAY DISEASE IN ALLAHABAD UTTAR PRADESH INDIA

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Introduction: Allergic diseases comprise of more than 25% of patients attending medicine outdoors and there is alarming extension year after year. Besides history given by the person and raised level of serum IgE there is no other way to diagnose allergic factors in particular. This prompts that skin prick or intradermal test for specific diagnosis and management of allergic diseases is important.

Objectives: This study was designed to establish the factors responsible for allergic united airway diseases in and around Allahabad city.

Methodology: Six hundred and fifty patients with history suggestive of allergic bronchial asthma and/or rhinitis with raised level of serum IgE were included in the study. In all the patients skin prick test was performed using lancet and 1:500 cone. Antigens supplied by V.P.Chest Institute Delhi. Eight groups of antigens viz. pollens, Dusts, Fungi, insects Fabrics & feathers, Dust mite, animal dander and miscellaneous were tested.

Results: Pollens showed a significant positivity and was in accordance with results recorded from northern India, aeropalynoflora study by Botany Department University of Allahabad. The other groups of antigens with significant positivity were almost similar to that present in Delhi & Kolkata. Immunotherapy results were gratifying and more encouraging in cases of allergic rhinitis alone than in cases of bronchial asthma alone or with rhinitis. Frequency and intensity of attacks were substantially reduced.

Conclusion: Skin allergy testing is still a useful tool and is specific to diagnosis of allergic respiratory diseases.

Keywords: Prick Test, Asthma, Rhinitis

3. PREVALENCE OF OBSTRUCTIVE SLEEP APNEA (OSA) AND ITS COMPLICATIONS IN OBESE INDIVIDUALS

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Introduction: With westernization every where Obesity with its attendant risks are on the rise and India is not an exception. But it needs to be mentioned here that the awareness regarding obesity and its risks are not up to the mark. This study was performed with the intent of knowing the prevalence of OSA and its risks in the obese population in the city of Chennai, one of the major metros in India.

Objectives: To find out the prevalence of OSA in obese individuals, to find out the prevalence of complications...
associated with OSA and to correlate the prevalence of OSA with neck circumference.

Methodology: About 75 individuals with BMI (Body Mass Index) >30 were taken up for the study and were subjected to an eight hour polysomnography. A diagnosis of OSA was made if the Apnea-Hypopnea index was >5. Pulmonary function test, packed cell volume, PO2, Electrocardiogram, Echocardiogram, Blood pressure recording were done to look for the complications and the results were tabulated.

Results: Out of the total study population around 30% were found to have OSA, which is in concordance with other studies. Many of them also had its complications.

Conclusion: The prevalence of OSA is on the rise do its complications. It’s the duty of the healthcare departments to increase the awareness level among the general public to tackle this emerging problem.

Keywords: Obesity, Obstructive-sleep, Apnoea

4. NON TUBERCULOUS MYCOBACTERIA: SCENARIO IN A TERTIARY CARE HOSPITAL IN NORTH INDIA

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Introduction: Infections by Non Tuberculous Mycobacteria (NTM) are emerging. In a common scenario, a simple reporting of acid fast bacilli (AFB) positivity in the smear masks the diagnosis of NTM and lands the patient to the ineffective treatment with standard antituberculosis regimen.

Objectives: To describe our center’s experience of NTM infection in patients with suspected tuberculosis.

Methodology: During 2004-2007, 9088 specimens (pulmonary and extra pulmonary) from 8476 cases with suspected tuberculosis were processed for mycobacteria. Smears were stained with Ziehl Neelson technique and cultured in BACTEC & LJ media. Identification of isolates and molecular characterization was done.

Antimicrobial susceptibility testing of rapidly growing NTM (20 cases) was done by disc diffusion method. Minimum inhibitory concentrations were determined by broth micro dilution method by using Sensititre TREK diagnostic plates. Clinical details were collected from hospital information system, patients and laboratory record.

Results: Tuberculosis was diagnosed in 809/8476(93.2%) cases and NTM in 55/809 (6.8%) cases. NTM included, slow grower in 17/809 (2.1%) cases and rapid grower in 38(4.7%) cases. M. fortuitum and M. chelonae were predominant isolates among rapid growers. Maximum NTM isolates were from sputum followed by pus.

Most rapid growers were sensitive to levofloxacin and linezolid, and were resistant to ampicillin ñsalbactum. The sensitivity to other antibiotics widely varied on case to case basis.

Conclusion: On the basis of our findings we can suggest that all specimens of suspected tuberculosis should be looked for NTM by timely examination of multiple specimens with due attention to culture and identification.

Keywords: NTM, Tuberculosis, Rapid grower, MOTT

5. RESPIRATORY ILLNESSES: HOW PREVALENT ARE THEY AMONG SUGARCANE FACTORY WORKERS?

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Introduction: Health status of factory workers is of great concern for occupational health specialist because it not only affects their ability to give their maximum but also affects the productivity as a whole. Prevention of diseases and maintenance of highest degree of physical, mental and social well-being is the main aim of occupational health. Among the various health problems, the respiratory illnesses accounts the maximum score among the Sugarcane Factory Workers who are usually exposed to more complicated working environment affecting their health grossly. Safe occupational environment is very important to safeguard the health of the factory workers to step up the production.

Objectives: To find out the prevalence of respiratory diseases amongst the sugarcane factory workers.

Methodology: Three Sugarcane Factories at Muzaffar Nagar were surveyed. All the factory workers were thoroughly examined for their health status as well as their working conditions were also taken into account to find any correlation. Prior permission was taken from the General Manager of each factory for the same. Data was recorded on a predesigned structured pre-tested performa.

Results: A total of 536 workers were examined, majority of them belonged to poor socioeconomic status (86%).
About 22% of the workers were females. Respiratory symptoms were found to be the major complaints (85%).

Majority of the males were having Respiratory Illnesses (82%) as compared to females. The working environmental conditions were found to be below standard.

Conclusion: The health status of sugarcane factory workers can no longer be overlooked and urgent measures should be taken to improve their health and working environment.

Keywords: Sugarcane, factory workers, respiratory diseases, working conditions

6. DIETARY FOOD ITEMS AS FOOD ALLERGENS IN PATIENTS SUFFERING FROM BRONCHIAL ASTHMA IN NORTHERN INDIA

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Introduction: Food sensitivity may be toxic or non-toxic, depending on the susceptibility to a certain food. Non-toxic reactions that involve immune mechanism are termed allergy. It is important that the correct diagnosis of food allergy should be made; if false positive diagnosis are made then people will unnecessarily restrict their dietary intake and are at risk of developing nutritional deficiencies.

Objective: To determine the extent to which committed hypersensitivity was associated with Ig E mediated food allergy, as defined by Skin Prick test in patients of asthma.

Methodology: 105 (15-40 years) clinically and diagnosed cases of asthma (GINA guidelines) were enrolled in the study. Patients underwent Skin Prick test to 22 food allergens and were asked whether they had suffered any food illness and if so to list such food(s). A positive Skin Prick test was defined as wheal diameter of >2mm, greater than the size of positive control.

Results: 17 (16.2%) patients were sensitized to at least one food allergen on basis of Skin Prick test while 91 patients (86.7%) reported illness to food(s) nearly always on basis of diet history. However, only 3 subjects (2.8%) who reported illness to a food also had a positive Skin Prick test to the same food.

Conclusion: There was little agreement between self-reported hypersensitivity to food(s) known to contain the food allergen of interest, and positive Skin Prick test, suggesting that most reactions are not due to Ig E mediated food allergy.

Keywords: Food allergy, Asthma, Immunoglobulin E (Ig E), Skin Prick Test

7. SPECTRUM OF DIFFUSE PARENCHYMAL LUNG DISEASE

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Introduction: Diffuse parenchymal lung disease is a term we have given to a heterogeneous group of clinical entities that share the following features: dyspnea, hypoxemia, restrictive ventilatory defect, and the presence of bilateral diffuse pulmonary infiltrates on the chest roentgenogram. The first steps in the work-up of a patient with DPLD are to take a thorough medical history, occupational history and to perform a thorough physical examination, along with pulmonary function test and to review the previous radiological examinations. Diagnosis can be narrowed down further by HRCT and Bronchoscopy.

Objectives: To study the etiological profile of diffuse parenchymal lung disease.

Methodology: The study was conducted on 75 patients during period of December 2006 to May 2008 at JNMCH AMU, Aligarh. Patients attending the OPD and emergency with bilateral diffuse shadows on chest x ray were included in the study. Patients were evaluated on the basis of clinical history, physical examination, routine and specific investigation including PFT, ABG, HRCT, and bronchoscopy (BAL, TBLB) as and when needed.

Results: Majority of the patients complained of dyspnea and cough with expectoration , 58 patients (77%) had dyspnea and 14 patients (18%) had cough with expectoration as their main complaint , dry cough and fever were main complaint in 2(2.6%)and 1(1.3%) patient respectively. PFT showed restrictive defect in 46 patients and obstruction in 12.On HRCT 41 patients (54%) were shown to have IPF, 27 patients (36%) as bronchiectasis 2 patients as pneumoconiosis, and 1 each as sarcoidosis, hypersensitivity pneumonitis , cryptogenic organizing pneumonia , viral pneumonia and rheumatoid arthritis associated ILD .

Conclusion: Majority of the patients presenting with diffuse shadows on chest x-ray and dyspnea turn out to be having IPF, bronchiectasis is present in patients with diffuse shadows on x-ray and cough with expectoration while other IIPs, pneumoconiosis and DPLD of with known causes collectively formed a narrow part of the spectrum.
8. PERCEPTION AND KNOWLEDGE ABOUT LUNG HEALTH AMONG NON-MEDICAL PERSONNEL WORKING IN A MEDICAL SCHOOL IN THE KATHMANDU VALLEY

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Introduction: The perception and knowledge about lung health has not been studied previously among non-medical hospital personnel in Nepal. This is important as these personnel will deal with patients suffering from respiratory diseases and may handle and dispose potentially infectious wastes.

Objectives: To study the perception and knowledge scores about lung health among non-medical personnel in a teaching hospital in the Kathmandu valley and to note the influence of demographic variables on the scores. The deficiencies in knowledge will be noted and a remedial educational session conducted.

Methodology: The study was carried out during July 2008 at the KIST Medical College, Lalitpur. The participants were explained the objectives of the study and invited to participate. Written informed consent was obtained. Their degree of agreement with a set of 50 statements using a modified Likert-type scale was noted. The scores of certain statements were reversed to calculate the total score. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups.

Results: Fifty-three personnel (response rate of 76%) participated. Twenty-nine (54.7%) were males and majority were in the age group 21-30 years. Majority belonged to the middle class and Brahmins, Chettris and Newars were the major ethnic groups. The median total score was 183 (maximum score 250). The disease and the air pollution scores (maximum 70) were 48 and 52. Differences in the total score and various subscores were seen among certain subgroups. Lacunae in certain areas were noted and have been used to design an educational program.

Conclusion: The overall score was good. Certain occupational and other groups showed specific deficiencies. It is expected that scores will improve after the educational session.

Keywords: Lung health, Knowledge, Nepal, Perceptions

9. ANTIMICROBIAL RESISTANCE AMONG STREPTOCOCCUS PNEUMONIAE ISOLATES OF THE RESPIRATORY TRACT INFECTIONS: FINDINGS OF NINE YEARS SURVEILLANCE IN NEPAL

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Introduction: Streptococcus pneumoniae is a leading cause of respiratory tract infections (RTIs). Antimicrobial Resistance (AMR) of S. pneumoniae is becoming an increasing problem worldwide with geographic variation. Surveillance of resistance is important for understanding the in-vitro effectiveness of available antimicrobials.

Objectives: Study was undertaken to evaluate AMR trends for S. pneumoniae isolates of RTIs in Nepal.

Methodology: This study was conducted in 10 major hospital/laboratories of Nepal from 1999 to 2007. Suspected S. pneumoniae isolates of RTIs were further identified and antimicrobial susceptibility testing was done by standard microbiological methods. A validation system was maintained by National Coordinating Laboratory for identification and susceptibility testing of participating laboratories.

Results: A total of 888 S. pneumoniae isolates of RTIs were reported during 9 years period. Of which, 611 (68.8%) showed some level of resistance towards tested antimicrobials. For Cotrimoxazole, Erythromycin, Ampicillin, Penicillin and Chloramphenicol, the overall resistance was 52%, 5%, 4.3%, 3.4% and 1.7% respectively with variation in each year. Cotrimoxazole showed the highest resistance rate (upto 70% in 2002) among the tested drugs with 68% in 2007. Initially, Erythromycin resistance was in decreasing fashion but has been increasing in recent years with 6% in 2007. Ampicillin showed growing resistance tendency with a peak of 10% in 2007. Penicillin showed a peak resistance of 10% in 2007 with yearly variation. Increasing resistance towards Ceftriaxone (0% in 2004 and 2005, 3% in 2006, 8% in 2007) and Ciprofloxacin (0% in 2006, 6% in 2007) has also been revealed.

Conclusion: High Cotrimoxazole resistance suggests discouraging its use in the pneumococcal RTIs. Increasing resistance toward Penicillin and other antimicrobials including Ceftriaxone and Ciprofloxacin is an emerging problem in Nepal and should be addressed accordingly. AMR surveillance findings could be crucial in establishing/modifying treatment guidelines of RTIs.

Keywords: Resistance, Streptococcus pneumoniae, Nepal
Chronic Obstructive Pulmonary Disease (COPD) is one of the leading problems affecting majority of population all over the world which diminishes the quality of life of the individual and create extra burden to the society as well as country. Inhaled bronchodilator therapy is the mainstay of treatment in the management of COPD. Various inhaled [e.g. metered dose inhaler (MDI) /dry powder inhaler (DPI)] formulations are available and are widely used among the COPD patients in Nepal.

This is an open prospective study, designed to compare the bronchodilating effect produced when salbutamol is delivered via two devices: MDI (Asthalin® from Cipla) and DPI (Asthalin® rotacap delivered via Rotahaler® from Cipla), in patients with stable COPD. It is proven by previous studies that intervention is necessary to improve the compliance of the patients; all subjects (total n=60; 30 in each group) are counseled and trained to follow correct inhaling technique through particular device. Then their improvements in lung function were measured with reference to the pulmonary function test based on spirometry. Patients enrolled in each group were not statistically different regarding to age (P=0.318), weight (P=0.324) & BMI (P=0.836). Among the total subjects 87% had smoking history and 2% were still smoking and there was no significant difference in smoking habit between two groups (p-value 0.544 > 0.05). Similarly 91.6 % of the total had exposure to indoor air pollution which had been the major risk factor for COPD. Most of the patients were on stage II COPD (62%). Salbutamol was found to have no effect on vitals of patients. Study showed there was no significant difference in the improvement of FEV1 (p=0.802), FVC (p= 0.693), FEV1 % (p=1) and PEF (p=0.448) between MDI and Rotahaler groups. Major side effect associated with the MDI users is headache (79%) while those among Rotahaler users were muscle cramp (79%). Even though intervention improve the inhaler using technique among the patients in both group, it was found even after counseling, DPI seems to be better understood by the patients in compare to MDI (p=0.003 & 0.00). In addition DPI was preferred by most of the patients who were familiar with both delivery systems. It was also found to be cheaper than the MDI.

Overall evidence suggests that although both MDI & DPI improve the lung function of COPD patients to similar extent, DPI is cheaper and more preferred and can be easily handled by the patients which can result in reduction of non-compliance.

Key Words: COPD, Salbutamol, DPI, MDI, Spirometry.

10. COMPARISON OF BRONCHODILATOR EFFECT OF SALBUTAMOL DELIVERED VIA MDI AND DPI IN COPD PATIENTS

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11. AN EPIDEMIOLOGICAL STUDY OF PATTERN OF SMOKING, ALCOHOL AND OTHER DRUGS CONSUMPTION AMONG FEMALE TEA PLUKERS IN THE KOTHMALE MOH AREA, NUWARAELIYA, DISTRICT, SRI LANKA

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Objectives: Smoking and alcohol consumption among the estate population are considered to be high. However there is little documented evidence on the prevalence of smoking and alcohol consumption among female estate workers in Sri Lanka. The aim of this study was to find out the prevalence of smoking, alcohol and other drug consumption among female estate workers and to find out what factors associated with these habits.

Methodology: A community based cross sectional study was carried out with a sample of 950 females on a presumptive prevalence of 10% of alcohol users, using a multistage random sampling technique. Data was collected by trained field public health midwives using an interviewer administered questionnaire. Statistical analysis of data was carried out using SPSS version 11.

Results: The response rate was 97.7%. Prevalence of smoking, alcohol and other drugs were 7.27%, 34.7% and 0% respectively. Among smokers, most smoked cigar (4%), followed by Beedi (2.9%). None indulge in dangerous drugs like Heroin and cannabis. Most consumed alcohol beverage was toddy(64%) followed by arrack(31%). Seventy four percent of women stated that they consume alcohol because they were influenced by their husbands. A significant positive association was observed between smoking and (a)illiteracy (p<0.05) (b) marriage(p<0.05) (c) Age more than 35 years (p<0.01). There was a significant positive association was observed between alcohol consumption and (a)illiteracy (p<0.001) (b) marriage(p<0.001) (c) parental drinking (p<0.001). There was a significant positive association between the use of alcohol and dispute within the family (p<0.001) as well as dispute with the neighbours (p<0.01)

Conclusion: One third of estate women consume alcohol and 7% indulge in smoking, which is very much more than for the rest of the country. There is an urgent need for health awareness to be implemented in the estate sector to overcome this problem.

Key Words: Alcohol, smoking, estate women, Sri Lanka, Prevalence
12. A STUDY OF TRENDS IN SEASONAL VARIATIONS IN COPD ADMISSION AT TB & CHEST DISEASES HOSPITAL, PATIALA (PUNJAB ) INDIA

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Introduction: Chronic obstructive pulmonary disease (COPD) is a common clinical condition characterized by airflow obstruction. The clinical course of the disease is characterized by intermittent exacerbations. Seasonal variations leading to increased hospitalization have been studied in COPD patients in various countries. In India, exacerbations of COPD are a common cause of admission in hospitals. To the best of our knowledge seasonal variations in COPD admissions have not been studied in this part of the World. So a study was planned to note the seasonal variations in COPD admissions at our institute.

Methods: COPD patients admitted at TB & Chest Diseases Hospital Patiala, during the calendar year 2006 were studied as per structured Performa. In all 101 patients were included in the study and monthly admission trends were noticed.

Results: The monthly variation in COPD admissions showed notable seasonal variation with peaks in December, January and February. Higher rates were also found in the months of March and April. Lowest rates were seen in May and June, with June the healthiest month.

Conclusion: There is a seasonal variation in COPD admissions due to exacerbations with a tendency for winter and spring to account for more hospitalization than summer and autumn. Environmental changes can lead to COPD exacerbation leading to increased admission rates so in a patient of COPD preventive measures can be taken according to trend in seasonal variation.

13. KNOWLEDGE OF DOCTORS UNDERGOING INTERNSHIP TRAINING AT NEPALGANJ MEDICAL COLLEGE TEACHING HOSPITAL ABOUT OXYGEN THERAPY

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Background: Oxygen is one of the commonly administered drugs to the patients in tertiary care hospital. Oxygen therapy administered appropriately results in better patient outcomes. For appropriate administration of Oxygen Therapy the knowledge is critical. The objective of this study was to assess the knowledge about Oxygen Therapy of Intern undergoing training at Nepalganj Medical College Teaching Hospital

Methodology: Nepalganj Medical College has two teaching hospitals; one at Nepalganj and another at Kohalpur. This study was done at Nepalganj. An open ended questionnaire for survey was developed by the Department of Medicine to assess the basic knowledge about Oxygen Therapy. The questionnaire was administered to those interns who completed half of the training period i.e. six months and consented to participate in survey.

Results: Twenty five interns completed half of the training period i.e. six months by the end of December 2007. Questionnaire was distributed to all; 20 interns filled the questionnaire. The response rate was 80%. Twenty five percent was aware of FIO2; 10% knew normal value of FIO2. Fifty percent was aware of long term oxygen therapy; 90% knew PaO2. Overall the knowledge of interns was inadequate.

Conclusion: The purpose of assessment of knowledge of interns about oxygen therapy is to update the training program. If doctor undergoing internship has sufficient knowledge about oxygen therapy and acquires the skills during training to optimally utilize the equipment, then being a health care provider he/she will deliver oxygen to the patients appropriately. The main limitation of this study relates to its small sample size.

Keywords: Oxygen Therapy, Nepalganj Medical College, Internship Training, Nepal.

14. TOBACCO SMOKING AND PATIENT DELAY IN ACCESSING TB TREATMENT SERVICES IN KATHMANDU, NEPAL

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Setting: Three districts (Kathmandu, Bhaktapur, Lalitpur) of Kathmandu valley with 2 million population and a 4% annual risk of TB infection (ARTI)

Objectives: To describe the effects of smoking on patient delay in reaching DOTS centre.

Methods: A cross-sectional study was carried out in 605 TB patients enrolled for DOTS between January and August 2006 in 37 randomly selected DOTS clinic in Kathmandu valley. Direct interviews were done using structured questionnaire. Bivariate analysis and multilevel mixed models were employed.
**Results:** Among 605 subjects, smoking prevalence was 50%. The median total delay was 114 days for smokers and 90 days for non-smokers. Patient delay was significantly longer in smokers than in non-smokers (60 vs. 45 days, \( p=0.007 \)). The most frequently reported initial symptom was cough in 86% of the respondents and 41% perceived smoking was the reason for their cough. About 20% of the subjects reported smoking as the main cause of TB. In multilevel analysis, smoking \( (p=0.038) \), female sex \( (p<0.001) \), illiteracy \( (p=0.002) \), unemployment \( (p=0.011) \), and symptom ‘coughing up blood’ \( (p=0.010) \) were associated with lengthened patient delay.

**Conclusion:** Smoking behavior was perceived as one of the main reasons for coughing that influenced delayed in seeking health care. Smoking remained the most significant factor in lengthened patient delay. Early diagnosis and treatment of TB can be enhanced if the TB program includes tobacco control messaging in its public awareness campaigns.

**Key words:** smoking, patient-delay, Nepal
Abstracts for Poster Presentation on TB Control
(P/TB/1-12)
1. EVALUATION OF AN INTERMITTENT SIX-MONTH REGIMEN IN NEW PULMONARY TUBERCULOSIS PATIENTS ON LONG TERM CORTICOSTEROIDS USE

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Introduction: Long term use of corticosteroids increases the risk of developing new tuberculosis or reactivating old tuberculosis. Generally it is felt that patients on long term steroid use developing tuberculosis may need longer duration of treatment.

Objectives: To assess the cure and relapse rates in 3 years, among the new smear-positive TB patients with chronic steroid use treated with CAT-I regimen (2E3H3 R3 Z3/4R3H3) of Revised National Tuberculosis Control Programme (RNTCP).

Methodology: TB suspects attending the medical OPD of Christian Medical College and Hospital were investigated. Patients on long term steroid use due to any cause were enrolled. Baseline estimation of cardiac, renal, liver function tests and blood sugars were undertaken. All patients received 2E3H3R3Z3/4R3H3 under supervision at CMC&H DOTS centre. Clinical and sputum smear examinations were undertaken every month up to 24 months.

Results: Of 95 patients admitted, 6 were excluded for various reasons from analysis. Of 89 patients, 81 (91.0%) had a favorable response at the end of treatment. During follow-up period, 6 died and 2 lost to follow-up. Of the remaining, four relapsed.

Conclusion: Category-I regimen, recommended for all the new smear-positive patients in the Indian TB programme, is effective in patients on long term steroid use.

Keywords: Treatment of TB patients on long term steroid use

2. BASELINE SURVEY OF KNOWLEDGE, ATTITUDE, BEHAVIOR AND PRACTICES (KABP) RELATED TO TUBERCULOSIS IN BANGLADESH

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Introduction: Tuberculosis burden ranked Bangladesh 5th in the world. Tuberculosis became major public health problem with yearly estimated 300,000 new cases and 70,000 deaths. DOTS strategy has been adopted since 1993 and expanded to all District and Sub-district in collaboration with NGOs but effective control of the disease burden has hampered by the fact that only 46% of the cases are detected. Considering the seriousness of the situation, National Tuberculosis Program (NTP) is implementing ACSM strategy to create mass awareness regarding TB which includes identification, complete treatment and follow-up.

Objectives: Assess KABP among a representative population in Bangladesh about tuberculosis control services to provide baseline measures for evaluating nationwide ACSM activities.

Methodology: Quantitative study will be conducted in July 2008 with 2000 sample distributed throughout all regions of Bangladesh, respondent will represent all sub-set population from urban (40%) and rural (60%) setting including ethnic and refugee that includes both male and female of most economically productive age group. In selecting the location geographical position, bordering with nearby country, cosmopolitan nature, presence of ethnic group, poverty dominance as well as presence of refugee has been considered. Semi-structured questionnaire will be administered for data collection. Data entry will be done through MS-ACCESS. Necessary tables and chart will be prepared; bi-variate and multi-variate analysis will be done using SPSS/PC.

Results: The result will be available by August 2008. Peopleís awareness; thoughts; ideas; acceptance of treatment; attitude, stigma, role of media and other important information will be available.

Conclusion: The result will help to achieve 70% case detection and 85% cure rates and se set campaign goal to promote early detection of sputum positive patients and promotion of availng DOT at free of cost; result will help to reshape implementation of ACSM focus to change service seeking behavior for diagnosis and treatment of Tuberculosis and to reduce stigma.

Keywords: ACSM, Campaign, KABP, Survey

3. LEAD QUESTIONS RELATING TO COUGH AMONG GENERAL OUT PATIENTS INCREASES TUBERCULOSIS CASE DETECTION.

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Introduction & Objectives: The Out Patients Department (OPD) of the upazila health complexes (UHC) of Bangladesh

represents care seekers from diverse socio-economic and socio-demographic status. TB services are provided from the UHC and suspects are identified based on clinical symptoms from people attends for consultation. Average 150 out patients attend per day in the OPD with different health problems.

Five such UHC were selected to see whether active screening among the OPD attendees has any influence in TB case detection. The study was conducted in the areas, where TB services are providing by Damien Foundation. The incidence of TB is 101 per 100,000 populations.

Methodology: Patients attending at OPD complaining cough spontaneously were interviewed.

Patients not complaining cough were also interviewed in order to see whether they have cough as associate problem. From both group, those who have cough for more than 15 days were advised for sputum examination.

Known TB patients and the people who did not complain cough even after leading question were excluded from the study.

Results: Total 260 (Male 155 & Female 105) patients who complained cough spontaneously and 247 (Male 147 & Female 100) who complained cough after lead questions undergone for sputum smear examination. 6% = 15 (Male 11 & Female 4) and 4% = 9 (Male 8 & Female 1) found positive in microscopy examination respectively in the two groups.

Conclusion: This study suggest that not examining sputum from those primary complain were not cough may lead to under detection of 37 % active TB. To screen for TB symptomatic among general out patient consultation the care provider should look beyond most common complain-cough.

Keywords: Screening, Spontaneous, lead question, case detection

4. ENDOBRONCHIAL TUBERCULOSIS ñ OUR EXPERIENCE

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Introduction: Tuberculosis remains a rampant infectious disease of global importance. Endobronchial tuberculosis is tuberculosis infection of the tracheo-bronchial tree with microbial and histopathological evidence. The clinical, radiologic and bronchoscopic presentation of Endobronchial tuberculosis is non-specific and it can easily be confused with common pulmonary disorders as asthma or bronchogenic carcinoma.

Objectives: To study the clinical profile of endobronchial tuberculosis with emphasis on mode of presentation, radiology and bronchoscopic findings.

Methodology: The study was conducted in the department of Pulmonary Medicine, Medical College, Kottayam from August 2006 to December 2007. Cases were evaluated based on clinical suspicion and radiological findings. Those with non resolving pneumonia or suspicious malignancy were subjected to fibreoptic bronchoscopy. All were sputum AFB Negative initially. Those with a histopathological evidence for Tuberculosis from bronchial biopsy have been included in the study.

Results: Nine cases were diagnosed with a slight female preponderance (55.6%). Mean age was 24.5. All presented with constitutional features and cough followed by wheeze and hemoptysis in few. Radiological findings were either a nonresolving pneumonia or lobar collapse and one had a normal chest X-ray. Fibre optic bronchoscopy showed an intraluminal growth in 55.6% and others showed a stenosis or non-specific bronchitis. Bronchoscopic biopsy showed granuloma suggestive of Tuberculosis in all nine cases. All were started on Cat-I antituberculous treatment and followed up. Bronchial stenosis was there in 44% of cases.

Conclusion: Endobronchial tuberculosis can mimic a variety of common respiratory disorders and a high index of suspicion is necessary for early diagnosis. Sputum AFB and chest x-ray are often inconclusive and fibre optic bronchoscopy and bronchoscopic biopsy is the key investigation. Complications like bronchial stenosis are common.

Keywords: Endobronchial Tuberculosis, Fiberoptic bronchoscopy

5. OUTCOME OF CAT - II IN DOTS ñ EXPERIENCE IN A MEDICAL COLLEGE

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Introduction: CAT-II is retreatment regimen in Revised national tuberculosis control programme (RNTCP) This is a...
much debated regimen specially by clinicians, however it gives a fair chance to patients of relapse and defaulters to take a supervised anti tubercular t/t...and get cured also prevents development of drug resistance.

Objectives: To study presentation of patients taking re-treatment regimen, to evaluate outcome of regimen, to evaluate defaulters if any and to study drug toxicity in DOTS.

Methodology: retrospective analysis of all cat- II cases registered & taking t/t at DOTS centre at IGGMC period Feb. 2003 to Dec 2006. All 5 1st Line anti TB drugs are used SHRZE ,T/t is thrice weekly supervised DOTS, total duration of T/t is 8 months, Outcomes, Criterions of inclusion are predefined in RNTCP. Injection streptomycin is given only after tablets are consumed.

Results: In all 59 cases were registered for CAT II at this dots centre. Most i.e. 77% were in younger age group of 20 - 50 years. M : F ratio was 1.9:1 i.e. almost double the type of case at inclusion were 25 (42%) relapse,16 (27.8%) TAD, 18 (31%) others., & there was no case of failure. Sputum conversion at end of Intensive phase was 97.5%.T/t outcome was favorable in 38(64%) cured 25 & t/t completed -13. Outcome was unfavorable in21 (36%) defaulted-13(22%), failure- 2, died -6 (10.2%). None of the defaults was due to drug toxicity.

Conclusion: It appears cat ii is an effective regimen, but the default rate is high in spite of DOTS, more efforts and counseling is needed to prevent defaults similarly pr,t/t drug sensitivity and details of previous anti TB treatment would help to make a better study

Keywords: re-treatment, DOTS, TB RNTCP

6. A STUDY ON PERFORMANCE, RESPONSE AND OUTCOME OF TREATMENT UNDER RNTCP AT TERTIARY CARE CENTER

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Introduction: Tuberculosis has got high priority within the health sectors, as it is a major public health problem. The main objective of Revised National Tuberculosis Control Programme (RNTCP) is to achieve at least 85% cure rate through DOTS and case finding 70% of the estimated cases. This is the most effective strategy available for controlling TB.

Objectives: To assess the RNTCP through assessment of performance, response and outcome of treatment of patients at Tertiary Care Center.

Methodology: Study Period: January 2006- December 2006 the DOTS Center, Department of Pulmonary Medicine, C.S.M Medical University, Lucknow (Erstwhile K. G. Medical College) followed RNTCP guideline for assessment of performance, response and outcome of treatment of patients. 230 cases were registered for the study in the four quarters (January to December 2006). Outcome of Treatment was prescribed as per world health organization treatment guidelines.

Results: In this study total 230 patients were registered, 82 (35.6%) were Cat I, 71, (30.8 %) Cat II regimen and 77 (33.4%) Cat III regimen. In Cat I out of 82 patients, 59 (71.9 %) Cured/treatment Completed, 14 (17.07%) Defaulted, 4 (4.8%) Failed and 5 (2.1%) Died. In Cat II out of 71 patients, 29 (53.5%) were Cured/ Treatment Completed, 21 (29.5%) Defaulted, 12 (16.9%) Died. In Cat III out of 77 patients, 83.1% Cured / Treatment Completed and 11(14.2 %) Defaulted, 2 (0.8%) failed. Total 152 (62.8 %) were pulmonary TB cases and 78 (33.9%) were extra pulmonary TB, 140 (60.8%) were male and 90 (39.1%) were female.

Conclusion: High Defaulter rate and Low cure rate among Cat II regimen in comparison to RNTCP standard have been reflected in the study.

Keywords: Tuberculosis, Revised National Tuberculosis Control Programme (RNTCP), Directly Observed Therapy ñ Short Course (DOTS), treatment outcome.

7. COMBINED MEDIUM WITH ISONIAZID AND RIFAMPICIN FOR THE IDENTIFICATION OF MULTI DRUG RESISTANT MYCOBACTERIUM TUBERCULOSIS

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Introduction: The introduction of second line anti tubercular drugs (Anti TB drugs) into the treatment regimens has urged the multi drug resistant Mycobacterium tuberculosis (MDR-TB) detection. A low cost method with quick adoptability in a resource-limited setting is the need of the hour.
Objectives: An attempt was made to combine the Isoniazid and Rifampicin in a single LJ medium for the detection of MDR-TB strains.

Methodology: A total of 107 M.tb strains both susceptible and resistant strains (mono, poly and MDR) with respect to first line drugs isolated from patients. Individual drug medium (INH and RIF) were prepared as per standard methods and the combined drug medium included the same concentrations of both the drugs in a single LJ slope. Drug susceptibility testing (DST) was performed at critical concentrations for INH (0.2 g/ml) and 40 g/ml for RIF by Proportionate method (PST).

Results Of the 107 isolates tested, 54 and 53 isolates were identified as non-MDR and MDR. 100% (53/53) of the MDR isolates showed similar resistance pattern in individual as well as combined drug medium. 36 of 54 non-MDR isolates were susceptible to INH and RIF by individual drug medium and in the combined medium. The combined medium was able to identify all the MDR strains included in the study without any discrepancy as that of individual medium.

Conclusion: the combination of INH and RIF in a single LJ medium did not have any technical difficulties. This medium can be used for the detection as well as selection of true MDR-TB isolates that are resistant both to INH and RIF. The combined medium can be included in disease control programmes and in surveillance studies where the detection of MDR-TB is warranted.

Keywords: Mycobacterium tuberculosis, MDR-TB, Isoniazid, Rifampicin and PST

8. PREVALENCE OF TUBERCULOSIS INFECTION AMONG BANGLADESHI MIGRANT WORKERS

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Introduction: The contribution of immigrants to the changing rate of pulmonary tuberculosis (TB) has been observed in many regions of the world. The epidemiologic importance of migration from high TB incidence to low TB incidence countries has been recognized for several years; the main countermeasure has been the implementation of screening programs for immigrants at the time of arrival, and providing required chemotherapy. Very few studies have been reported on prevalence of tuberculosis on Bangladeshi migrant workers.

Objectives: The aim of this study was to investigate the prevalence of tuberculosis infection in Bangladeshi migrant workers and to identify the risk factors associated with the disease.

Methodology: This descriptive cross sectional study was conducted on apparently healthy consecutive 9,757 subjects attending the Out Patient Department of Chadshi Medical Centre, Dhaka, a migrant health check up centre, from January 2007 to April 2008. Data were collected by interviewer administered structured questionnaire. Subjects were screened for tuberculosis by physical examination and radiological examination (Chest X-ray).

Results: The mean (+SD) age of the subjects were 27+9 years. Among the subject 9,523(97.6%) were male and 234 (2.4%) were female. Radiological findings suggestive of pulmonary tuberculosis were found in 592 (6.1%). Multivariate analysis revealed male sex, poor socioeconomic status and overcrowding are important predictors of TB infection.

Conclusion: The overall prevalence of pulmonary tuberculosis in active adults seeking overseas employment is 6.1%. Bangladeshi migrant laborers have a high risk due to high endemicity of the disease. The risk factors identified are: male sex, poor socioeconomic status and overcrowding. Preventive programs focusing on Education should be undertaken. Therefore further study including large sample size should be undertaken on a priority basis.

9. PREVALENCE OF TUBERCULOSIS IN FNAC SPECIMENS FROM LYMPH NODES

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Abstract: This is the retrospective study to evaluate finding of Fine Needle Aspiration Cytology(FNAC) from lymph node† of the patient who attended in National Public Health Laboratory[NPHL] conducted during period of two years (2063/04/11 to 2065/03/31).

Total number of FNAC performed during that period were 235, among them 207 FNAC was performed from enlarged lymph nodes.

Among them 128 (61.83%) were male and 79 (38.16%) were female. Among 207 FNAC, tubercular lymphadenitis was diagnosed in 75 (36.23%) patients, reactive lymphadenitis in

72

87 (42%) patients; acute suppurative lymphadenitis seen in 21 (10.14%) patients, metastasis malignancy was seen in 12 (5.79%) patients. Only blood and necrotic debris was found in 5 (2.41%) each and non Hodgkins lymphoma was diagnosed in 2 (0.96%) patients.

This leads to conclude that reactive lymphadenitis and tubercular lymphadenitis were most common finding in the FNAC from enlarged lymph node in NPHL, Teku.

10. EXTRA PULMONARY TUBERCULOSIS:

One decade experience

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Introduction: Extra-pulmonary (EP) tuberculosis (TB) refers to any lesion out side the lungs. EP TB can affect any organ in the body. TB bacilli spread via lymphatic system, blood circulatory system and direct spread to adjacent organs. EP TB is common in any condition where body immunity decreases like diabetes, malnutrition, HIV/AIDS etc. Expanded Primary Immunization (EPI) coverage of all the children population for last 12 years, Effective NTP activities running in the district for last 12 years and improvement of nutritional status of general population should decrease TB cases including EP TB in the district. Main objective of the preset study was to see the epidemiological trend of EP TB in the district.

Objectives: Specific objectives were to determine type of TB diagnosed in different years, to find out notification rate of New Smear Positive (NSP) TB and EP TB in different years, to assess EP TB among children in different years, to see the age and gender distribution among EP TB patients, to find out types of EP TB during study period, to determine site of gland affected, site of bones affected, site of spine affected and sides affected in case of bilateral organs.

Methodology: The present study was a descriptive study. Study period was 1998 to 2007. All TB patients diagnosed and registered in all 12 Upazillas (sub district) district Sador hospital, Medical College and Chest disease clinic & Hospital in Bogra district were the study subjects. Diagnostic tools were X-ray, FNAC, Biopsy, Cytology, tuberculin test and anti body assay.

Results: During study period 24873 all form TB were diagnosed of them 2848 (11%) were EP TB. Notification rate during study period 24873 all form TB were registered in all 12 Upazillas (sub district) district Sador hospital, Medical College and Chest disease clinic & Hospital in Bogra district were the study subjects. Diagnostic tools were X-ray, FNAC, Biopsy, Cytology, tuberculin test and anti body assay.

11. EVALUATING THE STRATEGIES FOR REDUCING THE BURDEN OF HIV-ASSOCIATED TUBERCULOSIS IN INDIA

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Consequences of the human immunodeficiency virus (HIV) epidemic in India include increased incidence of tuberculosis (TB) cases and an increase in TB-associated mortality. As more and more people are started on antiretroviral therapy, this would increase the lifespan of HIV-infected individuals and would also increase the chances of opportunistic infections striking. Tuberculosis continues to be the most common
opportunist infection in AIDS patients in India and is also responsible for most of the mortality in this group. Strategies to address the HIV-TB co-infections can be broadly classified into preventive measures (antiretroviral therapy, INH preventive therapy, contact tracing) and curative measures (active case finding and DOTS therapy). DOTS therapy recommended for all the TB patients in India has high treatment completion rates, is effective in controlling drug resistance and enhances TB control. However, DOTS alone may not be sufficient to mitigate a rising TB incidence and TB-associated mortality resulting from increasing HIV prevalence in India. ART being provided under the National AIDS Control Program in India would increase survival of HIV co-infected patients but may have little impact on prevention of new TB cases in India. The role of IPT and active case finding in preventing new TB cases among the HIV-infected and their contact remains largely unexplored. IPT can treat latent TB infection in HIV-infected individual thus reducing the numbers of new TB cases among HIV-infected persons and TB-associated mortality among HIV-infected persons in India. Our analysis shows that 60% efficacious INH regimen could prevent approximately 85,000 new cases of active tuberculosis under 100% coverage and 40,000 new cases of active tuberculosis per year with 50% coverage. This paper would present our analysis of the current status of active case finding and INH preventive therapy in the country and how introduction of these interventions can be instrumental in reducing the TB associated morbidity and mortality among HIV-infected individuals and their contacts.

Keywords: HIV, tuberculosis, ART, DOTS

12. TIME DELAYS IN DIAGNOSIS OF TUBERCULOSIS: A SYSTEMATIC REVIEW OF AVAILABLE EVIDENCE

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Introduction: Delay in diagnosis of tuberculosis results in increasing severity, mortality and transmission. Various investigators have reported about delays in diagnosis of tuberculosis. We aimed at summarizing the data on these delays in diagnosis of tuberculosis.

Objectives: 1) to summarize the patient, health-care system and total delays to diagnosis of pulmonary tuberculosis; 2) to compare the diagnostic delays between low and middle income countries [LMICs] and high income countries [HICs].

Methods: This study was a systematic review. A literature search was done in Medline from 1990 to 2006. We used following search terms: delay, tuberculosis, diagnosis, and help-seeking/health-seeking behavior without language restrictions. In addition, indices of four major tuberculosis journals were hand-searched. Subject experts in tuberculosis and authors of primary studies were contacted. Reference lists, review articles and text chapters were also searched. All the studies were assessed for methodological quality. Only studies carried out on smear/culture-positive tuberculosis patients, reporting total, patient and health-care system delays were included.

Results: A total of 352 potential studies were identified by the search. Forty five studies qualified for the review. The reported ranges of average (median or mean) total delay, patient delay, health system delay were 25-185 days, 4.9-162 days and 2-87 days respectively for both low and high income countries. The average patient delay was longer than the health system delay (28.7 versus 25 days). Both patient delay and health system delay in low income countries (31.7 days and 28.5 days) were longer than those reported in high income countries (25.8 days and 21.5 days).

Conclusion: The results of this review suggest that there is a need for revising case-finding strategies. The reported high treatment success rate of directly observed treatment may be supplemented by measures to shorten the diagnostic delays. This may result in reduction of infectious cases and better tuberculosis control.

Keywords: Tuberculosis, diagnostic delay, systematic review
Abstracts for Poster Presentation on HIV/AIDS
(P/HIV/1-24)
1. KNOWLEDGE ABOUT HIV INFECTION AND ATTITUDE TOWARDS PEOPLE LIVING WITH HIV/AIDS AMONG THE NURSES WORKING IN BPKIHS

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Introduction: In world More than 40 million people are living with HIV/AIDS, 2.3 million are under 15 yrs, 14000 new infections each day, 1.7 million human infected with HIV/AIDS, 3.1 million deaths from AIDS, Million new HIV cases (13425) per day1.

Objectives: The main objective of this study was to find out the knowledge about HIV infection and explore the attitude of nurses towards the PLWHA working in BPKIHS.

Methodology: It was descriptive cross sectional study conducted among the nurses working in medical-surgical and pediatric nursing department of BPKIHS. Using stratified random sampling technique units or wards were selected and using population proportionate method 60 nurses were selected out of 240 nurses to collect the data using pre-tested questionnaire in the first week of October 2007 and collected data was analyzed using SPSS-11.5 software package.

Results: It was found that 60% nurses were between age group of 20-25 years, Hindu (91.7%), staff nurses (78.3%), and none of them taken HIV/AIDS training previously. Nurses had more knowledge on causes (86.7%), transmission, symptoms, applying universal precaution (98.3%), where as less knowledge on confirmation of diagnosis(45%), ART (36.7%), PEP (45 %), and HIV/AIDS related services available at BPKIHS i.e. VCT (8.3%), PMTCT (13.3%), ART (8.3%), HIV test (53.3%) and PEP (15%). Majority of the nurses (70%) reported high risk of getting HIV infection, where as 28.3% reported medium risk and 1.7% reported no risk. Most of the nurses had positive attitude regarding care of PLWHA.

Conclusion: Based on findings it can conclude that there is inadequate knowledge about HIV/AIDS pathogenesis, services available at BPKIHS, transmission and prevention of HIV/AIDS along with some negative attitude. Hence, continuous in-service education on HIV/AIDS management and care for nurses is very essential and urgency.

Keywords: HIV/AIDS, Knowledge, Nurses

2. HIV & SEXUAL REPRODUCTIVE HEALTH HOTLINE/TELECOUNSELING

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Issues: There are estimated 75,000 people living with HIV/AIDS in Nepal (Source UNAIDS 2007) but the reported case is 10,086 (NCASC). Lack of knowledge of VCT and fear of stigma and discrimination are the main barriers for accessing HIV related services. Lack of intervention for general population, prompted a rapid-upscale of toll-free Hotline/telecounseling services.

Projects: In Dec 2007, Family Planning Association of Nepal (FPAN) started HIV & sexual reproductive health Toll-free Hotline/telecounseling services with the support of UNDP (United Nation Development program). This service is the only one in the entire state operating with a 7 counselors on VCT and hotline counseling which provides services 12 hours a day, 6 days a week for callers from the general population from 75 districts.

Results: Data analyzed have revealed that each day there are approximately 19-25 calls from housewives, doctors, driver, politician, factory worker, FM station, Shopkeeper, service provider, teacher, students etc and a total 1,940 calls received Dec 2007-Mar 2008 including 1,503 male and 437 female. Counselors have been responding to HIV related fears, anxieties of the community and on issues to risk behavior and sexual reproductive health.

Lesson Learned: Toll-free Hotline/telecounseling services have proved to be a key component of HIV intervention especially with the general population. Hotline/telecounseling facility will ensure privacy and confidentiality.

Keywords: Advocacy, Prevention and Awareness

3. ASSESSING THE ROLE OF CIVIL SOCIETY ORGANIZATIONS IN ATTACKING HIV/AIDS IN PAKISTAN

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Introduction: Pakistan is considered as a high risk low prevalence country for HIV/AIDS. Government of Pakistan
established the National AIDS Control Programme in 1988. International donor agencies have also been working with the government and the civil society organizations (CSOs). However, weak surveillance system, inadequate health infrastructure, religious dogma, cultural barriers, unequal gender roles and general public insensitivity related to HIV/AIDS has delayed the success of these efforts so far. Over the years, the civil society sector in Pakistan has also emerged as an important actor in this field. This paper analyzes the nature and role of the CSOs in attacking HIV/AIDS in Pakistan.

Objectives: The objective of this paper is to study the nature and role of the civil society organizations in attacking HIV/AIDS in Pakistan through public private partnerships in order to analyze their effectiveness and contribution.

Methodology: The methodology will be based on both primary data collection and secondary literature. At primary level, the authors plan to interview key figures working on HIV/AIDS in both public and private sector institutions. Donor Agencies, government of Pakistan AIDS control programmes, Ministry of Health and civil society organizations will be covered. At the secondary stage, data collection will be drawn from public and private sector, journal articles, books, seminars/workshops, media campaigns and advocacy materials.

Results: On-going research

Keywords: HIV/AIDS, Public Private Partnerships, CSOs

4. SYNERGIZING YOUTH SEXUAL REPRODUCTIVE HEALTH AND HIV PREVENTION IN INDIA - A MODEL FOR CHANGE............

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Introduction: This Pilot project, Youth Friendly Initiative, was administered in the Gosainganj Block of the Lucknow District owing to vulnerable situation of adolescents and young people to STI/HIV infection. This operational model for ASRH service delivery had been developed with a goal of promoting dual protection for young people against STIs/HIV and unwanted pregnancy through greater access to youth/adolescent friendly SRH and HIV prevention services. The main objective of the project were to create a supportive environment for SRH services for young people, to improve knowledge and skills of young people around SRH issues, to enhance access of young people to youth friendly services for SRH and HIV prevention and to document processes at all level and stages of the implementation for its future replicability and up-scaling.

Implementing Site: Implementation site includes the Katra Bakkas PHC, which covers 34 revenue villages covered by PHC. The total population coverage of PHC is 35,000, out of which 10,646 were young people in the age group of 10-24 (30.41% of the total population). The sex ratio of this age group is not favourable. There were 5842 (54.87%) male and 4804 (45.12%) female.

Methodology: A combination of both quantitative and qualitative research methods was adopted to meet the research objectives. Quantitative methods (structured questionnaires) were used to assess young peoples health seeking behaviors, their needs and concerns, as well as access to and utilization of public health services for their sexual and reproductive health (SRH) concerns. At the same time, the status of health system infrastructure was ascertained through a facility survey, with a view towards determining the preparedness of these facilities to cater to the special needs of young people. Service providers at various levels (CHC, PHC and Sub-centre) were interviewed to find out the nature and quality of services available to young people, along with the sensitivities and attitudes of service providers to young peopleís SRH care.

Focus Group Discussions (FGDs) were conducted with unmarried young people (male and female), married young people (male and female), and their parents (mother and fathers) to collect qualitative data.

In-depth interviews were conducted with service providers, local self government, (Head of Panchayati Raj Institution)

Conclusion: The pilot project has improved sexual and reproductive health knowledge of young people to a large extent. This model can be further researched and replicated for improving reproductive health knowledge of young.

5. AN ASSESSMENT OF COMMUNITY LEVEL INTERVENTION WITH WOMENÍS GROUPS IN INCREASING THE ACCESS OF FEMALE CLIENTS TO THE VOLUNTARY COUNSELING CENTRES

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Introduction: The impact of gender upon womenís reproductive health are severe and well known, and are rooted deep into the society in Bihar. This is well reflected in discrimination with women, general devaluation and neglect of womenís health in a society where men are considered
superior to women. An intervention with the womenís groups at the community level empowers them.

Objectives: The study has the following objectives

✔ To know the extent to which females are accessing the voluntary counseling centres as compare to the males
✔ To compare the ratio of females to male who attend the LEPRA Society voluntary counseling centre with the average figures of the state voluntary counseling centres

Methodology: The methodology comprises of analysis of last 1 year pre test counseling formats of all the clients who attended the voluntary counseling centre of LEPRA Society in Munger district where the intervention on reproductive health and HIV/AIDS is running and collection of the state voluntary counseling data from the website www.bsacs.org.

Results: In the last one year 1080 clients attended the LEPRA Society Voluntary Counseling Centre. Out of them 770 clients were female making around 71.3 per cent of all who attended the centre and rest 28.7 percent were male.

From June 2007 to June 2008, in the entire state a total of 12845 clients were counseled at the government VCC. Out of them only 51.4 per cent were female and rests 48.6 per cent were male.

Conclusion: Community level interventions on reproductive health and HIV/AIDS with womenís group may increase the attendance of females at the voluntary counseling and testing centres.

Key worlds: HIV/AIDS, Voluntary counseling centre, community level interventions

6. SEXUAL MINORITIES AND THEIR IMPACTS ON WOMENIS REPRODUCTIVE HEALTH

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Objectives: A higher rate of HIV infections is transmitted through homosexual contact. Most MSMs are youth and are an incredibly diverse group, in terms of both their economic circumstances and sexual attitudes and behavior, more economically disadvantaged than older youth, often more subject to peer. Most of them either are married or will become married, thus having an impact upon womenís reproductive health.

Methodology: Research is on the basis of peer education. Governmentsí different strategies for national health program in terms of sexual health and HIV/AIDS has shaded a negative impact among such vulnerable people: due to socio-cultural-religious reasons, those behaviors are to a large extent invisible, often difficult to access in terms of standard sexual health promotion framework of the nations.

Results: The most needing information, education and counseling are driven underground. Men and women are at not only greater risk of being infected, but also HIV/AIDS affects women also as caregivers in the family.

Conclusion: An urgent need to promote behaviors, which enable to adopt a lifestyle without risk of HIV and to provide counseling services, is essential. When youth belong to an organization that helps them and provides opportunities, they better avoid risky behaviors, including those that might lead to HIV/AIDS. Not every social sector should discriminate/stigmatize them so that they can create an environment to change their behavior. Regardless, there should be ensured legal framework protections of human rights of those sexual minorities.

7. BACTERIAL AND FUNGAL ISOLATES OF LOWER RESPIRATORY TRACT INFECTION AMONG SUBJECTS WITH AND WITHOUT HIV

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Introduction: Since HIV positive patients were susceptible to many lower respiratory tract infections.

Objective: The present study was undertaken to find out the prevalence, pattern of bacterial and fungal infections among 160 respiratory symptomatic (82 HIV positive and 78 HIV negative) patients in Madurai, South India.

Materials: HIV infection was diagnosed by performing two ELISA tests with two different kits according to the WHO recommendation for developing countries (Inno test, Belgium and Lab system, Finland). Early morning expectorated sputum was collected and subjected for microscopic examination as per RNTCP.

Results: Tuberculosis infection was diagnosed by sputum smear among 22 (26%) of the 82 HIV positive and 36 (46%) of the HIV negative. Single bacterial infection with Streptococcus pyogenes and Staphylococcus aureus were more in HIV+TB+ patients i.e. 9% and 27.2%respectively. Among HIV+TB- patients the prevalence of Klebsiella sp. and Candida sp. infections were higher and it was 18.9% and 15.5% respectively but both organisms were negative in HIV-TB- patients. HIV+TB+ patients had lower respiratory infection with S.pyogenes and S.aureus (16% and 25%) more than HIV-TB- patients (2.2% and 4.5%).
Conclusion: HIV positives were more prone for gram negative and fungal infections. Also no inter group significance was noticed with reference to polymicrobial infections. The wide variations for the prevalence and pattern observed in the present study are in contrast to published literature. It might be related to the base line health, nutritional status, smoking habits, living environment and susceptibility to infections, etc.

8. KAP STUDY AMONG HEALTH SERVICE PROVIDERS (HSP) REGARDING SEXUALLY TRANSMITTED DISEASES (STDs) IN HILLY TERRAIN OF UTTARAKHAND

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Introduction: STDs are the major public health problems in both developed and developing countries and are among the commonest notifiable diseases. The lack of information on sex education and contraceptive choice in the masses, have resulted in increased incidence of STDs and Human Immunodeficiency Virus HIV. HSPs play a key role in timely identification and treatment of such ailments. Majority of young males from this hilly state are in defence services or have gone to other places to earn money, they are likely to bring back not only STDs but also the deadly virus to their families.

Objectives: To assess the knowledge, attitude and practices regarding STDs among HSP.

Methodology: A cross sectional survey among all HSP of Doiwala block in district Dehradun was conducted. A pre formed, pre tested, self administered questionnaire followed by in-depth interview was performed with individual HSP. The questionnaire comprises topics viz. Status of HSP; Syndromic Management Training of HSP; Relationship between HIV and STDs; Treatment behaviour; etc.

Results: A total of 96 HSP were surveyed, majority of them were registered (87.5%), regarding the treatment behavior of HSP only 26.04 % had advised their patients to undergo investigation for confirmation of diagnosis, >85% of HSP have heard of HIV/AIDS but lack the knowledge of identifying individuals of high risk behaviour and early referral of such cases for screening at VCCTC / ICTC.

Conclusion: There is an urgent need to generate awareness and motivation among the HSP not only for STDs treatment but also for HIV/AIDS epidemic.

Keywords: Human Immunodeficiency Virus, Health Service Providers, Sexually Transmitted Diseases, VCCTC

9. COMPARISON OF INDIRECT IMMUNOFLUORESCENCE ASSAY AND ENZYME LINKED IMMUNOSORBENT ASSAY FOR DETECTION OF ANTIBODY TO HUMAN IMMUNODEFICIENCY VIRUS.

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Introduction: The number of HIV cases is increasing in an alarming rate in Bangladesh. Several types of assays have been developed for detection of antibody to HIV. Indirect Immunofluorescence Assay (IFA) offers many practical advantages as a validating test for ELISA.

Objectives: The present study was conducted to evaluate the utility of the Indirect Immunofluorescence Assay (IFA) for diagnosis of HIV antibody.

Methodology: A total of 92 subjects attending the Virology Department, BSMMU for HIV screening were selected for the study and were tested by ELISA and IFA methods.

Results: Forty six out of 92 subjects were HIV antibody positive by ELISA method. Out of 46 ELISA positive samples, Forty-five samples were positive by IFA while one sample was negative. 45 IFA positive samples, 26 samples were confirmed by Western Blot and 19 samples by LIA This negative sample was also confirmatory by Line Immuno Assay (LIA) and was found negative. This result indicates that ELISA was 100% sensitive and 97.8% was specific for diagnosis of anti-HIV antibody.

Conclusion: Even though the sample size is small, we suggest that the IFA could be an alternative confirmatory test for diagnosis of HIV infection in Bangladesh.

Keywords: Indirect Immunofluoroscence Assay, ELISA, Human Immunodeficiency Virus

10. BARRIERS IN USING HEALTH SERVICES FOR SEXUALLY TRANSMITTED INFECTIONS AND HIV BY FEMALE SEX WORKERS IN KATHMANDU, NEPAL

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Introduction: In the general population in Nepal HIV levels are below 0.5%, but in Female Sex Workers (FSWs) it is 4%
nationally and 17% in and around the study area from the capital. FSWs have limited access to proper information and sexual and reproductive health services, including testing, counseling and care on HIV.

**Objectives:** To explore reasons for use and non-use of health services by the FSWs for Sexually Transmitted Infections (STIs) and HIV.

**Methodology:** A mixed-methods approach was used to identify factors determining utilization of sexual health services by FSWs. A total of 425 questionnaire-based interviews and 15 in-depth interviews were conducted in 2007 in Kathmandu.

**Results:** The age range of the FSWs was 17-35 and most had their first intercourse between ages 15 to 17. Most FSWs (30.8%) reported having had a STI. Many reported in the survey having used a condom during their last sexual intercourse, but the in-depth interviews suggested the opposite. One fifth (21%) had never ever visited health facilities. FSWs turned to private clinic (44.2%), NGO clinic (37.6%), hospital (18.6%) and pharmacies (15.5%) for treatment. Lack of confidentiality created distrust among FSWs, and stopped them from accessing health services. Embarrassment, disregard by health care providers and poor communication with them, long waiting time, inappropriate clinic time and fear of exposure as a sex worker were the major barriers to seeking sexual health services.

**Conclusion:** Since FSWs have limited access to information and health services, and operate under cultural and socio-economic constraints, education for behaviour change, economic opportunities and relevant policy changes can bring solutions.

**Keywords:** health services, FSWs, STI/HIV

**11. AN ANTHROP OLOGICAL STUDY ON SEXUAL RELATIONSHIPS, RISK BEHAVIOUR, AND HIV RELATED PERCEPTION AMONG MEN WHO HAVE SEX WITH MEN IN ANDHRA PRA D ESH**

**Reddy K**

**Background:** Needs assessments studies have shown that among certain subgroups of the transgender population, HIV prevalence and risk behaviors are high. Men who have sex with men (MSMs) may perceive that the consequences of HIV infection have dramatically improved with the availability of highly active antiretroviral therapy. The study therefore sought to identify trends in HIV infection rates and associated risk behaviours among MSMs. This study examines sexual self-labels, sexual behavior, HIV transmission risk, and psychological functioning among the MSM.

**Objective:** To assess the risk factors associated with HIV prevalence and incidence among men who have sex with men in Andhra Pradesh state. Further, the study aimed to compare HIV prevalence and incidence among MSM and other risk group.

**Methods:** A prospective study involving MSM, aged between 18-30 years who had not previously tested HIV status. Subjects were recruited through physician clinics and community outreach centres in Tirupati. Participants were tested annually for HIV antibodies and asked to about the Scheduled questionnaire pertaining to socio-demographic characteristics, sexual behaviours and substance use and data was collected.

Data was collected from 400 MSMs from May 2007-March 2008. Assessments of risk factors for HIV were carried out using univariate and multivariate analysis. The median age was 26 years. 62% respondents report that they area living in unstable housing, to have had less than a high school education, and to have been unemployed. Most of the respondents are belong to low socio-economic status. The majority (68%) reported having sex only with men; 81 (11.9%) reported bisexual activity. Among the 400 MSMs who had one or more regular male partners, 52.7% reported at least one episode of unprotected anal sex in the year before enrollment; the corresponding number among the 47.2% who had one or more casual male partners. They reported a higher mean number of male sex partners in the previous year and a higher mean number of regular partners. The respondents are more likely to report engaging in receptive (60%) and insertive (39%) anal intercourse with regular partners and receptive anal intercourse with casual partners (37%). Condom breakage was reported only 6% of occasions by respondents. Among respondents who were in a relationship with a regular male sexual partner, the most commonly reported sexual practices were deep kissing, mutual masturbation and receptive oral intercourse without ejaculation. In regard to substance use, MSMs were more likely to report the use of white fluid, cocaine, heroin, Ganja and marijuana and to use injection drugs.

**Conclusion:** Heterosexual men who reported non-regular sexual relationships compensated for their increased risk lifestyle by using condoms more frequently and showed only an increased incidence of chlamydial infection. More consistent condom use with regular partners was significantly associated with the absence of sexually transmitted infection. These findings suggest that transmission between regular partners has been underestimated.

**12. UNIVERSAL PRECAUTION PRACTICES TOWARDS HIV/AIDS AMONG DENTISTS OF BALOCHISTAN, PAKISTAN, 2008**

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**Introduction:** Acquired immunodeficiency Syndrome (AIDS) is a fatal disease with no limits and boundaries spreading
worldwide. Transmission of HIV infection within dental surgery may occur by direct contact of tissue with secretions or blood, from droplets containing infectious agents, or via contaminated sharps or dental instruments. Adherence to the universal precaution guidelines is the safest and most effective way of reducing the risk of exposure to HIV and other serious infections in dentistry.

Objectives: To assess the level of knowledge, perception and universal precaution practices and to describe the association between general characteristics, knowledge, perception and Universal Precaution practices towards HIV/AIDS among Dentists of Balochistan.

Methodology: This study was a cross-sectional descriptive postal survey conducted in Balochistan province, Pakistan. The study included 115 dentists out of which 86 responded. A pre-test of instrument was done for validity and further improvements among dentists. General characteristics of the dentists were summarized by using descriptive statistics by number, percentage and mean with standard deviation. Pearson Chi-square and Spearman’s rank correlation test was used.

Results: Around half (52.3%) of the respondents needed to be improved on the overall knowledge on HIV/AIDS and universal precaution practices. More than half of the dentists had a less supportive perception (58.1%). Regarding the intentions to provide dental treatment to the PLWHAs, less than 25% of the dentists expressed their willingness to provide treatment to HIV infected patients. 63.3% of the dentists had overall poor infection control practices. There was a significant association between knowledge and universal precautions (p<0.0001) and we also found a significant association between perception and universal precaution practices (p<0.0001).

Conclusion: Universal precaution practices were found to be associated with the sex, marital status, educational attainment and practice duration. Only one third of the dentists had good level of practices.

Keywords: Dentists, HIV/AIDS, Universal precaution practices

13. PERCEPTION AND KNOWLEDGE ABOUT HIV/AIDS AMONG MEDICAL STUDENTS IN A MEDICAL COLLEGE IN WESTERN NEPAL

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Introduction: HIV/AIDS is fast becoming a major problem in Nepal and can be a heavy burden on society. Medical students as future doctors will play a crucial part in HIV/AIDS control programmes and in treating patients. Students are taught about HIV/AIDS throughout the curriculum. Their feedback is necessary so that appropriate changes in the teaching-learning methodology can be carried out.

Objectives: a) To study the perceptions and knowledge of medical students regarding HIV/AIDS b) Obtain information on lacunae observed so that appropriate teaching-learning programs can be initiated and c) Compare the median scores among different subgroups.

Methodology: The study was carried out among the first, third, (preclinical) fifth and sixth semester (clinical) students at the Manipal College of Medical Sciences, Pokhara, Nepal. The students were explained the objective of the study and invited to participate. Written informed consent was obtained. Basic demographic information was noted. Student perception regarding HIV/AIDS was studied by noting their degree of agreement with a set of 22 statements using a modified Likert-type scale. Certain statements were negative and their scores reversed to obtain the total score. The median score was compared among different subgroups.

Results: A total of 163 students participated. The median score was 77 (maximum possible score 110). The median score was significantly higher among Nepalese students compared to other nationalities (p=0.000) and among the scholarship students compared to the self-financing (p=0.000). There were no significant differences in scores among the semesters. Certain specific lacunae were observed. The free text comments stressed the importance of safe sex in controlling HIV/AIDS.

Conclusion: The overall scores were high. The lacunae observed can be addressed through educational interventions. The foreign and the self-financing students need greater training to tackle HIV/AIDS. More detailed studies among other semesters and in other medical schools are required.

Key words: HIV/AIDS, Medical students, Nepal, Perceptions

14. CHBC service to PLHA in Far west Nepal

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Introduction: The Far Western Region (FWR) of Nepal is considered to have one of the Asia’s fastest growing AIDS epidemics. The people of FWR are migrants to India for employment. After a long time returning back to the home town, they have earned one very big gift i.e. HIV/AIDS. Due to the uneducation and poverty the people of FWR are infected and affected by HIV/AIDS.

Objectives: To give the CHBC services and information of treatment and prevention of HIV/AIDS.
Methodology: The NAP+N is providing community home base care (CHBC) services in Kailali, Kanchanpur & Doti district (collaboration with Elton John Aids Foundation, EJF), in partnership with local CBOs. Once diagnosed with HIV, a person is referred to CHBC services. The trained CHBC workers conduct home visits and uneducated PLHA and their family about patient care and needs.

Results: The CHBC services are providing essential care to PLHA and their families. The CHBC service reinforced ART adherence, improved referral and follow-up between community and hospital, increased self-care knowledge, and reducing stigma and discrimination.

15. CARE AND SUPPORT FOR HIV/AIDS WIDOWS IN RURAL INDIA

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Background: The growing number of women with HIV infection is stimulating innovative responses to meet their emerging needs. HIV positive widows are doubly stigmatized by the social and economic stresses of HIV/AIDS.

Objective: To break down barriers of stigma and discrimination and for the care, support and empowerment to Widows infected by HIV/AIDS.

Methodology: Rural Development Trust (RDT) involving formation of a self-help group carried out in Ananthapur District, India started from 2001 with 20 and has now 99 HIV widows. RDT trains HIV/AIDS widows, to become peer counselors and Community, Field Health, and Para-health workers in three-month courses at its training education centers. A group of qualified persons cater to the physical, psychological, nutritional and socio-economic needs of rural women who are infected or affected. Loans for income generation, micro-credit facilities, treatment for opportunistic infections, placement of their children and supplementary nutrition are important activities.

Results: Developing a self-help group in rural areas for replication linking prevention with the broad framework of care and support involving medical care, socio-economic independence, and psychological support especially rural women infected and affected by HIV/AIDS. Working with other HIV positive people in a safe and nurturing environment helps HIV widows reach out to each other, and being employed and taking home a salary gives them confidence.

Conclusions: Social factors such as level of income, employment, education, environment, ethnicity, and culture affect the health of HIV/AIDS Widows. These women need care and psychosocial support to start to make change in their lives.

Key words: HIV/AIDS Widows, Care and Support.

16. INITIAL OUTCOMES OF AN EMERGENCY DEPARTMENT OPT-OUT HIV TESTING IN SOUTH INDIA

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Introduction: In 2006, the US Centers for Disease Control and Prevention (CDC) released new recommendation for routine opt- out HIV testing. Introducing the HIV testing in the Emergency Department (ED) setting serves the dual purpose of expanding HIV testing services to a new venue and improving clinical care for acutely ill patients.

Objectives: To assess the level of patients acceptance of opt-out HIV testing offered as part of standard medical care at the emergency medical care ward of urban referral teaching hospital in South Chennai. To determine the HIV prevalence rate at emergency medical care units.

Methodology: During 2 month period, ED patients in the age group of 13-64 treated for wide range of conditions were approached by ED staff and offered opt-out HIV testing. HIV testing was performed unless the patients decline.

Results: During the study period 155 patients were treated in ED and 117 were in the age group of 13-64. Among the 117 patients 23 were either clinically unstable or went against medical advise within 12 hours of admission. The mean age group of 94 patients who were offered and accepted for HIV testing was 42.98 years. Out of 94 patients who underwent HIV testing 56.38% were able to collect the results before the discharge due to absence of point of care testing.

Conclusion: The implementation of new CDC recommendations is feasible in the EDs due to high acceptance (100%) by the patients. The prevalence rate in the ED was higher than the state prevalence rate.

Keywords: HIV opt-out testing
17. PREVALENCE AND ANTIMICROBIAL SUSCEPTIBILITY PROFILE OF BACTERIAL AGENTS CAUSING LOWER RESPIRATORY TRACT INFECTIONS AMONG HIV SERO-POSITIVE INDIVIDUALS

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Introduction: Respiratory tract infection (LRTI) is one of the major clinical problems among HIV positive individuals and majority are due to bacterial infections.

Objectives: The aim was to study the prevalence of bacterial agents causing LRTI among HIV sero-positive individuals.

Methodology: Sputum specimens were collected from HIV sero-positive individuals living in Kathmandu valley. Specimens were cultured using standard microbiological tools at the bacteriology laboratory of Nepal Medical College. Bacterial pathogens were identified and antimicrobial susceptibility testing was carried out.

Results: Sputum specimens from 120 HIV positive individuals (69 males and 51 females) were analyzed in the study, of which, 78(64.8%) yield bacterial pathogens. Among the 7 bacterial pathogens isolated, K. pneumoniae was the most predominant (28.6%) followed by E. coli (17.9%), S. pneumoniae (17.6%), S. aureus (16.5%), P. aeruginosa (8.9%), M. catarrhalis (70%) and H. influenzae (3.6%). For Gram positive pathogens, chloramphenicol, tetracycline and gentamicin were found most effective (50-55%) followed by cotrimoxazole (30-33%) and the least effective ampicillin (below 23%). Gentamicin was found the most effective drug against all the Gram negative isolates (50-60%), followed by chloramphenicol (50-62%) except for P. aeruginosa (0%). Tetracycline, cotrimoxazole and ampicillin showed variable susceptibility pattern against the Gram negative isolates.

Conclusion: Prevalence of LRTI caused by bacterial pathogens has been observed quite high among the HIV sero-positive individuals. Moreover, higher resistance of these bacterial pathogens towards common antimicrobials has been demonstrated which produce obstacles in the management of LRTIs in patients with HIV. Therefore, sputum culture and susceptibility should be done for all HIV positive individuals to rule out or manage the LRTIs properly.

Keywords: Prevalence, Respiratory tract infection, HIV sero-positive individuals, Resistance, Nepal

18. REVILING THE FEMALE FACE IN THE CYCLE OF HIV/AIDS

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Study objectives:
- To share concerns related to women vulnerability to HIV/AIDS in Nepal
- To share experiences on how best to mitigate stigma and discrimination among people living with HIV/AIDS in Nepal

Background: HIV in Nepal is still considered as a concentrated epidemic among female Sex Workers, their clients, Injecting Drug Users among others, and a cording to Dr. Laxmi Bilas Acharya up date research on the HIV/AIDS Epidemic in Nepal 2008, the prevalence rate is I less than 1% of the general population, but more than 5% in one or more sub groups. Despite the low rate of people infected, the number of new infections is increasing, hence creating a need for multi sectoral approach in the struggle against HIV/AIDS. Among the different groups of people considered responsible for the spread of HIV in Nepal, women are put at the centre due to their vulnerability, and the strong social/cultural attachment. Its mostly women and the girl child who are most affected by the resultant effects. The high level of stigma among communities hinders infected people to open up, and to fully utilize the available health services. In the recent Integrated Biological Behavior Survey conducted by Family Health International, with the support of USAID 2008 in Kathmandu, Pokhara, and 22 District in the terai region, it was established that, a total of 10,721 people were infected with HIV in Nepal, of whom 7354 are women, and 3367 are men. The number of new infections in the month of June 2008 was 175 people.

Methodology: The method used to collect data was by probability sampling, were by a two cluster sampling, and Respondent driven sampling were used.

Conclusion: Much as women are considered more vulnerable to HIV/AIDS, there is still need to strengthen the awareness among the general community, and involvement of the private sector may also play a good part. Women need to be sensitized on their rights.

19. SIX-MONTH OUTCOME OF PATIENTS WITH ADVANCED AIDS INITIATING ART AT SETI ZONAL HOSPITAL

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Introduction: Seti Zonal Hospital (SZH) is the second largest ART centre in Nepal delivering comprehensive HIV care since

Objectives: This study was done to review six-month outcome of advanced AIDS patients initiating ART.

Methodology: This is a retrospective descriptive study of HIV-positive individuals with advanced AIDS who initiated ART at SZH before February 2008 and continued to receive treatment for at least 6 months from SZH. Advanced AIDS was defined as WHO clinical stage 4 or stage 3 with CD4<50. The study team collected data using patients’ medical files and death report forms in cases where patients had died.

Results: In a cohort of 51 patients, 39 were males and 12 were females. The average baseline CD4 was 43; the median CD4 rise and weight gain was 156 and 3 kg respectively for those surviving at least 6 months. In this cohort, 17 (33%) died before completing six months of treatment. 14 individuals were on concurrent TB treatment. Three of them were due to IRIS TB. The most common initial regimen was ZDV+3TC+NVP (59%) among which 47% was changed into another due to anemia.

Conclusion: The mortality rate among patients with advanced AIDS initiating ART is much higher (33%) than that among all PLHA initiating ART (12%). Due to high rates of IRIS TB in this cohort (6%), extra vigilance is needed when starting patients with advanced AIDS on ART. Increasing hemoglobin or ensuring alternatives should be considered before starting ART on Zidovudine to advanced AIDS patients in this setting.

Keywords: ARV, Outcome, advanced AIDS, Seti Zonal Hospital

21. SOCIO-ECONOMIC and FAMILIAL PROBLEMS OF HIV-POSITIVES IN ANDHRA PRADESH: A STUDY

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Introduction: The focus of this paper is on socio-economic and familial problems of the HIV-positives living in Andhra Pradesh. Of the six HIV prevalence states in India, A.P. is one among them. Andhra Pradesh has the dubious distinction of having the second highest number of HIV-positive persons in India. There are 4,80,000 HIV-positive persons living in the state which accounts for 10 per cent of the national HIV infections. The number of persons afflicted with HIV is on the fast increase in A.P. Majority of the HIV-positives are mostly from below the poverty line families and some of them are from middle income families. Most of them are facing socio-economic, familial and many other problems. In the present study an attempt is made to highlight the socio-economic and familial problems of the HIV positives.

Methods: To find out the socio-economic and familial problems of HIV-positives, data were collected from 100 HIV-positives who are regularly attending SVRRG Hospital, Tirupati, Andhra Pradesh for treatment. The data collected during November-December, 2007. The information has been collected from each respondent individually through personal interviews.

Results: The problems of the HIV-positive identified are as follows:

A. ECONOMIC PROBLEMS

i. Poverty 70%
ii. No earning capacity
iii. Frequent quarrels
iv. desertion
v. No proper care

B. SOCIAL PROBLEMS

i. Ostracism 30%
ii. No access to credit 30%
iii. discriminaton 60%
iv. Lack of proper Medicare
v. Frequent quarrels
vi. Withdrawal from schools due to lack of many as well as well stigma and discrimination.

C. FAMILIAL PROBLEMS

i. Lack of support
ii. Desertion
iii. No proper care

Conclusions: Since most of the HIV-positives are poor, they are facing economic, social and familial problems. Government has to initiate information education and communication programmes on HIV / AIDS to eliminate social and familial problems. Similarly, government has to design certain social security and welfare programmes, income generation schemes etc., for HIV-positives. Such programmes would give economic relief to them.

22. KNOWLEDGE AND ATTITUDE REGARDING HIV/AIDS AMONG SECONDARY LEVEL SCHOOL STUDENTS OF DANG DISTRICT NEPAL

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HIV/AIDS remain one of the major global public health problems, infecting more than 33 million population worldwide.
Number of HIV infected young and adults are higher than those of other age groups.

With the principal objective to assess level of knowledge and attitude regarding HIV/AIDS among secondary level school students, this cross sectional study was conducted in the year 2008 in Dang district, Nepal. Utilizing systematic random sampling and using self-administered questionnaire, 400 students (200 each from public and private schools) were included in this study.

The result shows, almost all (99.3%) students have heard about HIV/AIDS with the teachers (79.8%) as major sources of getting information. About a quarter (24%) students had good knowledge, whereas 55.5 percent average knowledge and 20.5 percent poor knowledge. Majority of the students attitude towards HIV/AIDS and people living with HIV/AIDS was fair (64.5%), followed by negative attitude (25.3%) and positive attitude (10.3%). The students at the private schools are more likely to have good knowledge (62.5%) than those of public schools (37.5%), which is statistically significantly associated (p-value 0.02). On the other hand the students at the public schools are more likely to develop positive attitude towards HIV/AIDS than those of their private counterparts (public 58.5% vs private 41.5%), though it was not statistically significant (p-value 0.70).

We conclude that, the level of knowledge among the students of private schools was better than those of public schools, which is reverse in developing attitudes towards HIV/AIDS. We recommend that the school health programs are to be conducted; participation of the students in extra curricular activities and opportunities to participate in the district level HIV/AIDS awareness programs are to be provided.

Key words: Knowledge, Attitude, Students, HIV/AIDS, School, Nepal

24. KNOWLEDGE REGARDING CONDOM USE AGAINST HIV/AIDS AND ITS PRACTICE AMONG MALE FREED BONDED LABOR OF KANCHEPUR DISTRICT, FAR WEST PART OF NEPAL

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HIV/AIDS is one of the global public health problems infecting more than 33 million people worldwide by 2007. Estimated 70 thousand people are HIV infected with 10,868 reported cases in Nepal by early 2008. Condom use could be one of the best methods for protecting HIV transmission.

With the main objective to identify sexual behaviour and knowledge on HIV/AIDS among the long route bus and truck drivers, this cross sectional study was conducted in 2008 in Kanchepur district, the Far-Western part of Nepal. Information was gathered from 155 purposively selected truckers with the help of structured questionnaire.

The result revealed that almost all (94.6%) truckers have experienced sex and majority (84.2%) of them had started sex before the age of 20. Among them almost two-third (65.1%) were found to have had sex with sex workers. About one-third (30.1%) were using condom all the time whenever they had sex with sex-workers with occasional users 54.4 percent, and never used 15.5 percent. Though all the truckers had heard about HIV/AIDS, only very few (14.8%) of them had good knowledge regarding the cause of HIV/AIDS. Misconceptions regarding HIV transmission prevail among few truckers though almost all (97%) knew sexual contact as the mode of HIV transmission. More than half (52%) knew that there is no cure for HIV/AIDS. Strong association between marital status and knowledge on HIV/AIDS, types of respondents and knowledge on HIV/AIDS and educational status and sexual behavior was found with (p-value 0.00, 0.00 and 0.003) respectively.

We conclude that, most of the truckers indulged in highly risky sexual behaviour and the level of knowledge on HIV/AIDS still remain poor. Programs such as IEC/BCC, promotion of condom use as well as awareness raising programs need to be implemented as a priority area.

Key words: Sexual Behaviour, Knowledge, HIV/AIDS, condom, truckers, Nepal

25. SEXUAL BEHAVIOUR AND KNOWLEDGE ON HIV/AIDS AMONG LONG ROUTE BUS AND TRUCK DRIVERS OF KANCHEPUR DISTRICT, FAR WEST PART OF NEPAL

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HIV/AIDS pandemic is one of the most serious public health problems. Because of their highly risky sexual behaviour and low level of knowledge regarding HIV/AIDS, youths between the age of 15 and 24 years are more vulnerable to get HIV infection.
freed bonded labor in Western Part of Nepal. Utilizing purposive sampling, 151 freed bonded labor between the age of 15 and 49 year old were recruited.

The result shows that, about half (44.5%) were youths at the age 24 year and below. Nine out of 10 (90%) labor had heard about condom, for which radio was the major source of information. Television and NGO/ INGO workers were other sources on information. More than half (51%) were using condom, of whom almost three quarters (73%) were using for the purpose to prevent pregnancy followed by 41 percent to prevent from HIV infection. More than eight in 10 (85%) had adequate knowledge to use condom as one of the preventive measures against HIV/AIDS. Freed bonded labors who were employed were more likely to have adequate knowledge (87%) than those of others, which shows strong statistical association (p-0.04). Additionally labors who were using condom were more likely to have adequate knowledge (93.9%) than those of others, which is also statistically associated (p- 0.04).

From this study, we conclude that the freed bonded labor had adequate knowledge on condom use as one of the preventive measures against HIV/AIDS, though they had poor condom use practice. We recommend that the awareness raising programs for the promotion of condom use are to be implemented.

**Key words:** Knowledge, Attitude, Freed Bonded Labor, Condom, HIV/AIDS, Nepal
Abstracts for Poster Presentation on Tuberculosis Laboratory
(P/TBL/1-5)
1. PREVALENCE OF TUBERCULOSIS IN KARACHI PAKISTAN: ISOLATION, IDENTIFICATION, MOLECULAR CHARACTERIZATION AND MULTI DRUG RESISTANT PROFILE OF M. TUBERCULOSIS STRAINS

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Introduction: The 22 high TB burden countries (HBCs) account for approximately 80% of the estimated new TB cases are being reported each year. According to WHO, nearly 2 billion people (one third of the world’s population) have been exposed to the pathogen and annually, 8 million people fall ill with, and 2 million people die from the T.B. disease worldwide. India and Pakistan share the largest number(<2million) with a sizeable population living below the poverty level. The problem has been aggravated by AIDS factor.

Objectives: The alarming TB menace has warranted us to get the Pakistani population surveyed with reference to Mtub. Identification and multi drug resistance profile of the isolates to achieve the goals of effective therapeutic interventions.

Methodology: Duly collected TB patients’ specimens were subjected to classical and molecular identification (including PCR based strategies for strain identification and for screening of drug resistant genotypes).

Results: A total of 60 and 40 % (of Mtub isolates) were categorized as typical and atypical strains respectively. rpo B (rifampicin), inh A (isoniazid) and cat G (catalase) markers are being exploited for molecular (PCR assisted approaches) identification of the typical strains.

Conclusion: Atypical strains of Mtub have dominated as the causative agent of the disease. The over all findings indicate that rifampicin and isoniazid resistant strains are the leading cause of MDR TB disease. Well planned drug intervention approach (es) need to be followed in addition to poverty elevation in the developing world.

Key words: Typical - Atypical M.tub, MDR strains, rpoB, inhA, cat G.

2. LOOP - MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) FOR THE DIAGNOSIS OF HUMAN PULMONARY INFECTIONS WITH ENVIRONMENTAL (ATYPICAL) MYCOBACTERIA

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Introduction: Because of their slow growth rate, identification of mycobacteria is a notorious problem for public health and clinical laboratories. Most first anti-tuberculosis drugs have less in vitro activity against Mycobacterium avium complex and Mycobacterium kansasii. Therefore rapid species identification and proper use of drugs are key requirements for the effective treatment of tuberculosis. Loop-Mediated Isothermal Amplification (LAMP) is a novel nucleic acid amplification method in which species-specific primers were designed by targeting gyr B gene.

Objectives: To use Loop-Mediated Isothermal Amplification (LAMP) for the rapid diagnosis of mycobacteria.

Methodology: 130 (69 specimens from patients with suspected pulmonary mycobacteriosis and 61 specimens from follow up patients) sputum specimens, requested for culture by physician, were obtained from German-Nepal Tuberculosis Project (GENETUP). After decontamination by N-acetyl L-cysteine-NaOH treatment and subsequent concentration by centrifugation. The concentrated specimens were then treated for LAMP. DNA extraction from all the specimens was performed by freezing and thawing method. Then LAMP was performed by using a set of 6 species-specific primers for M.tuberculosis, M. avium, M. intracellulare and M. kansasii provided by Osaka Prefectural Institute of public Health, Japan.

The same concentrated specimens were subjected to culture on L-J medium and fluorochrome - staining.

Result: From the suspected pulmonary mycobacteriosis, the sensitivity of LAMP in smear and culture positive sputum specimens was 100% (32/32) and the sensitivity in smear-negative and culture positive specimens was 87.5%(7/8). The specificity in culture-negative samples was 86.20% (25/29). Similary from follow up patients, the sensitivity of LAMP in smear and culture positive sputum specimens was 89.47%(17/19) and the sensitivity in smear-negative, culture positive specimens was 83.33% (10/12). The specificity in culture-negative samples was 76.66% (23/30). Out of total 77 LAMP positive samples, 75(97.40%) were identified as Mycobacterium tuberculosis, 2(2.6%) were identified as Mycobacterium intracellulare. One case of intracellulare was identified from the patient with suspected mycobacteriosis and another case was identified from follow up patient.
Conclusion: This study confirms the involvement of environmental mycobacteria in pulmonary infections. The infection with M. avium complex from immunocompetent patient may be related to the rising prevalence of HIV/AIDS globally. Similarly another case from follow up patients may indicate effectiveness of tuberculosis treatment. All suspected tuberculosis cases, when showed growth on culture media, referred to as tuberculosis and physician start treatment of tuberculosis. These activities are main burden for the effective control and management of tuberculosis. LAMP was already established as highly sensitive and specific diagnostic technique. Thus it can be used as diagnostic tool for rapid identification of mycobacteria.

Keywords: Mycobacterium, LAMP, DNA, pulmonary mycobacteriosis

3. IMPROVED DIAGNOSTIC LRP ASSAY FOR DETECTING ACTIVE AND NON-REPLICATING TUBERCLE BACILLI

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Introduction: Diagnosis of latent TB infection is a myth for want of a simple, direct tool. Among the growth based diagnostic tests in the pipeline, tests based on mycobacteriophages have shown promise. Luciferase reporter phages (LRP) were developed from the first temperate mycobacteriophage Che12 and a TM4 based temperature sensitive (ts) phage mutant, phAE159 expressing FFlux driven by promoters of genes expressed during dormancy such as hsp60, isocitrate lyase (icl) and alpha crystallin protein (acr). TM4 based construct expressing FFlux driven by hsp60 and acr promoter viz. phAETRC201, phAETRC202 produced detectable light in dormant as well as in actively growing M. tuberculosis cells, the performance of which was tested in sputum samples in the present work.

Objectives: To determine the sensitivity of the developed constructs. To evaluate the performance of 3 different combinations of the luciferase reporter phages in sputum samples by diagnostic LRP assay.

Methodology: Sensitivity of the constructs: LRP assay was performed on M. tuberculosis H37Rv, a drug sensitive isolate and a MDR isolate to determine the minimal number of bacilli required to produce detectable light.

Evaluation of LRP constructs in sputum samples: Three different combinations of the luciferase reporter phages Viz. phAE129 followed by phAE129, phAETRC16 followed by phAE129 and phAETRC201 followed by phAETRC16 were tested in 50, 36 and 18 sputum samples respectively. Relative light units (RLU) were measured at 4, 24 and 72 hours after the second infection.

Results & Conclusion: LRP construct, phAETRC201 was more sensitive than other constructs. It was able to detect M. tuberculosis H37Rv as low as 81 cells while with clinical isolates it required 4 logs more cells. Combinations of phAETRC16 followed by phAE129 and phAETRC201 followed by phAETRC16 diagnosed almost all the culture positive sputum samples in addition to detecting 17 more positives in the culture negative group.

Keywords: Mycobacteriophage, Tuberculosis and Luciferase

4. COMPARATIVE EVALUATION OF TWO-REAGENT COLD STAINING METHODS WITH ZIEHL-NEELSEN FOR SPUTUM SAMPLES IN THE PRIMARY DIAGNOSIS OF TUBERCULOSIS

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Introduction: Ziehl Neelsen Method (ZN method) is still the most extensively used procedure for AFB staining. However in the developing countries its applicability in peripheral health centres appears to pose operational problems. In this study, a two step modified cold staining method and another cold staining method using Gabbetís methylene blue is compared with the ZN method.

Objectives: To evaluate a two-reagent modified cold staining method for detection of Acid-Fast Bacilli in sputum smears and to compare it with Gabbetís staining method.

Methodology: Two hundred and sixty seven sputum samples from pulmonary tuberculosis suspected patients attending Kasturba Hospital Manipal were used for the study. Triplicate smears were prepared from each of the 267 sputum samples, of which one was allotted to the two-reagent modified cold staining method, another one for Gabbetís method and the other to the Ziehl-Neelsen (Z-N) method ( taken as gold standard). Slides were randomly selected and coded and observer had no information of the result and the staining method used for each slide. The smears were read blind by a Post graduate student. To ensure correct grading, the faculty in charge checked all the positives and 20% of the negative smears.

Results: Out of 267 sputum samples screened for AFB by 3 staining methods, 21 were found to be smear positive by ZN method and 18 by Gabbetis method and 19 by the modified cold staining method. When compared with ZN method, Gabbetis method gave a sensitivity of 85.71% specificity of 100%, positive predictive value of 100% and negative predictive value of 98.8% and in modified cold staining method gave a sensitivity of 90.48%, specificity of 100%, positive predictive value of 100% and negative predictive value of 99.2%.

Conclusion: The modified two step cold staining method was found to be at least as specific as the Z-N method although somewhat less sensitive but superior to Gabbetis method. However, large-scale multicentric studies in different climatic conditions need to be conducted to assess its efficacy in the diagnosis of pulmonary tuberculosis.

Key words: Modified Cold stain, AFB, Ziehl Neelsen, Gabbetis

5. PILOT STUDY ON THE EFFICACY OF BETA GALACTOSIDASE REPORTER PHAGE FOR RAPID FIELD DIAGNOSIS OF TUBERCULOSIS FROM SPUTUM SAMPLES

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Introduction: Among the many rapid TB diagnostic assays, phage based reporter assay has emerged as a promising one. We report the preliminary findings of a pilot study conducted using beta-galactosidase reporter phage construct developed from a temperature sensitive mutant of TM4 phage. Upon infection by beta-galactosidase reporter phage viable *M. tuberculosis* cells express the enzyme, resulting in the development of blue color in the presence of the substrate X-gal.

Objectives: To validate blue phage assay for TB diagnosis.

Methodology: Broth cultures were set up for 43 smear positive and 7 smear negative sputum samples in modified Kirchner’s medium without phenol red, incubated at 37°C and tested on day 7. Phage and Xgal at 40 ?g/ml concentration were added to the cultures and incubated overnight. The assay control consisting of the phage and Xgal, positive control consisting of *M. smegmatis mc²155* cells, phage and Xgal and negative control consisting of medium and Xgal were included. Any color developed on the next day was visually compared with the assay control.

Results: Forty-three smear positive samples developed blue color with 36 being deep blue, six medium blue and one light blue. Among the seven smear negative samples, two produced deep blue color. Thus the sensitivity of the assay was 100% while specificity was 71% only. The discrepancy in specificity could be due to the limitation of the conventional smear, which requires $10^4$ organisms per ml of sputum for detection. However, the specific nature of the mycobacteriophages enables them to produce visually detectable blue color with $<10^4$ organisms per ml of sputum.

Conclusion: Mere addition of sputum to lyophilized phage and X-gal should indicate positivity through development of color. Testing more samples, comparing the results with conventional culture and quantifying the color developed could aid in field application of the assay.

Keywords: *M. tuberculosis*, Blue phage and Diagnosis