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3689 ALENE, K.A.; ANSHA NEGA; TAYE, B.W. **Incidence and predictors of tuberculosis among people living with human immunodeficiency virus at the University of Gondar Referral Hospital, Northwest Ethiopia.** *BMC Infectious Diseases* (2013) **13** (292) (28 June 2013) London, UK; BioMed Central Ltd [En, 27 ref.] Department of health Officer, Institute of Public Health, College of Medicine and Health Sciences, The University of Gondar, Gondar, Ethiopia. Email: kefadis@gmail.com

BACKGROUND: Tuberculosis (TB) is the leading killer of people living with HIV (PLHIV). Many of these deaths occur in developing countries. This study aimed at determining the incidence and predictors of tuberculosis among PLHIV. METHOD: A five year retrospective follow up study aimed study was conducted among adult PLHIV. The Cox proportion hazards model was used to identify predictors. RESULTS: A total of 470 patients were followed and produced 1724.13 person-year (PY) of observation and 136 new TB cases occurred during the follow up period. The overall incident density of TB was 7.88 per 100 PY. I was high (95.9/100 PY) in the first year enrollment. The cumulative proportion of TB free survivals was 79% and 67% at the end of the first and 5th year respectively. Baseline WHO clinical stage III (AHR=2.88, 95% CI=1.53-5.43), WHO clinical stage IV (AHR=3.82, 95% CI=1.862-7.85), CD4 count < 50 cells per ul (AHR=2.13, 95% CI=1.28-3.53) and ambulatory or bed ridden

functional status (AHR=1.64, 95% CL = 1.13 - 2.38) were predictor of time to TB occurrence. CONCLUSION: TB incidence rate among PLHIV, especially in the first year of enrollment was high. Advance WHO clinical stage, limited functional status, and low CD4 count (<50 cell/ul) were found to be the independent proctors of TB occurrence. Early care seeking and initiation of HAART to improve the CD4 count and functional status are important to reduce the risk of TB infection.

3690 MNISI, T.; TUMBO, J.; GOVENDER, I. **Factors associated with pulmonary tuberculosis outcomes, inmates in Potchefstroom prison in North West province.** *Southern African journal of epidemiology and infection* (2013) **28** (2) 96-101 Johannesburg, South Africa: South African Institute for Medical Health Care University of Limpopo, Medunsa campus, South Africa. Email: indiran.govender@gmail.com

Tuberculosis is the leading cause of death among the world prison populations. Prisons are reservoirs of tuberculosis and threaten inmates, prison staff, visitors and the surrounding community. This study was carried out to explore the associated factors with pulmonary tuberculosis treatment outcomes at Potchefstroom prison. A retrospective record review of 202 inmates with tuberculosis, whose treatment outcomes as of march 2010 were known, was conducted. Data on sex; racial group; level of education; weight; smoking habit; existence and

type of co-morbidity, diagnostic classification; treatment regimen, initiation date. Completion date and outcome; use of directly observe treatment; allergy and hospitalization were captured. the majority of inmates (142, 70.3%) were aged 21-37 years while 48(23.8%) were aged 38-53 years. There were 198(98%) male and 4(2%) female inmates. Fifty-five inmates (27.3%) had attained Grade 6 and lower, 71 (35.1%) Grade 7-9, 68(33.7%) Grade 10-12 and 8(3.9%) above Grade 12. One hundred and fifty-eight (78.2%) received occasional visitors there were 121(59.9%) smokers. The adverse outcomes for tuberculosis were significantly increased by an age <37 years, human immunodeficiency virus co-infection, smoking a lack of support and absence of directly observed treatment. Inmate who received fewer visits and less social supports must be supported by community volunteers, counselors and psychologists in order to motivate them and enhance favorable treatment outcomes. Smoker need to stop smoking. Younger inmates require peer support groups.

3691 AL-HAJJOJ, S.; VARGHESES, B.; AL-HABOBE, F.; SHOUKRI, M.; MULDER, A.; SOOLINGEN, D. VAN **Current trends of *Mycobacterium Tuberculosis* molecular epidemiology in Saudi Arabia an associated demographical factors.** *Infection, genetics and evolution* (2013) **16**, 362-368 Amsterdam, Netherlands; Elsevier B.V. [En, 47 ref.] Mycobacteriology Research Section, Department of Infection and Immunity, King Faisal Specialist Hospital and Research Centre, P.O. Box 3354, Riyadh 11211, Saudi Arabia. Email: hajoj@kfshrc.edu.sa, bvarghese99@kfshrc.edu.sa, farah88@hotmail.com, shoukri@kfshrc.edu.sa, Dick.van.Soolingen@rivm.nl

Data are scarce on demographical factors related to the population structure of *Mycobacterium*

Tuberculosis in Saudi Arabia. A study was conducted on 902 clinical isolates to explore current trends in the phylogeography and associated demographical factors of tuberculosis by using spoligotyping and 24 loci based MIRUVANTR typing. Young male patients (aged 16-29 and 30-44) were predominant in this cohort. The phylogenetic diversity among *M. tuberculosis* isolates was found high, as almost all known genetic lineages were identified. Delhi/CAS (24.6%), EAI (13.7%) and Haarlem (11.3%) were the most common lineages observed, particularly among the low age groups (16-29 and 30-44 years), whereas elderly patients (>60 years) showed a predominance in the lineages of EAI (p-value 0.026) and LAM (p-value 0.005). overall, molecular strain cluster rate was 34.4% with an elevated rate among the elderly (>60 years) showed the lowest degree of clustering (12.5%). The largest level of clustering was noticed among cases caused by strains of the lineages Haarlem (59.8%), Beijing (55.8%) and LAM (42.8%). The current population structure of *M. Tuberculosis* in Saudi Arabia is highly diverse with significantly associations to demography, transmission dynamics and origin of the patients. The difference in genotype distributions among low and high aged patients reflects the ongoing in the strain population structure in the country.

3692 ALAVI, S.M.; NADIMI, ZAMANI, G.A. **Changing pattern of infectious etiology of fever of unknown origin (FUO) in adult patients in Ahvaz, Iran.** *Caspian Journal of Internal Medicine (CJIM)* (2013) **4** (3) 722-726 bobol, Iran; Babol University of Medicine Science [En, 20 ref.] Infectious and Tropica; Diseases Research Center, Jundishapur University of Medical Science, Ahvaz, Iran. Email: alavi.seyedmohammad@yahoo.com

BACKGROUND: Although infectious diseases are the most common source for the fever of unknown origin (FUO), but the spectrum, of

infectious diseases is changing overtime. The purpose of the study was to define the clinical spectrum and changing the pattern of FUO. METHODS: This existing data existing data based study was undertaken from 2007 to 2011. One hundred-six patients fulfilling the modified criteria for FUO referred in a teaching hospital in Ahvaz were enrolled for analysis. The data extracted from the patients medical files and etiologic agents caused FUO to be assessed. RESULT: Infection were the most common cause of FUO in 48.4% of the patients. Among the infections, the most important causes of FUO were represented by extra-pulmonary tuberculosis 15(31.9%), osteomyelitis 10(21.3) and abdominal abscesses 6 (12.8%). CONCLUSION: The pattern of FUO in the region is thought to be changed to extra pulmonary TB osteomyelitis. Tuberculosis is still the leading cause of FUO region.

3693 SHAVAKHI, A.; TABESH, E.; YAGHOUTKAR, A.; HASHEMI, H.; TABESH, F.; KHODADOOSTAN, M.; MINIKARI, M.; SHAVAKHI, S.; GHOLAMREZAEI, A. **The effects of multistrain probiotic compound on bismuth-containing quadruple therapy for *Helicobacter pylori* infection: a randomized placebo-controlled triple-blind study.** *Helicobacter* (2013) **18** (4) 280-284 oxford UK; Wiley-Blackwell [En, 25 ref.] Department of Internal Medicine, Infahan University of Medical Sciences, Hezar Jarib Street, Isfahan 81746-73461, Iran. Email: elham7979@yahoo.com

BACKGROUND: Evidence has shown benefits of single-strain probiotics for *Helicobacter pylori* eradication. We investigated the effects of adding a multistrain probiotic compound on bismuth containing quadruple therapy for *H. pylori* infection. MATERIAL AND METHODS: adults patients with peptic ulcer diseases and confirmed *H. pylori* infection (n=180) were randomized to

receive bismuth-containing quadruple therapy (omeprazole, bismuth sucitrate, amoxicilline and clarithromycin) plus a probiotic compound or placebo for two weeks the probiotic compound contain 7 bacterial species including *Lactobacillus* and *Bifidobacterium* strain and *Streptococcus thermophilus*. Eradication of *H. pylori* was assessed 4 weeks after medication by ¹³c urea breath test. Other outcomes were dyspepsia symptoms, therapy-related adverse effects, and patient's tolerance. RESULTS: Eighty-four patients in the probiotic and eighty-six in the placebo group completed trial. With per protocol (intention to treat) analysis, *H. pylori* was eradicated in 82.1% (76.6%) of the probiotic and 84.8% (81.1%) of the placebo group, p=0.392 (0.292).

Symptoms were significantly improved with similar trends in both groups. Regarding the adverse effects, diarrhea was less frequent (2.2 vs. 11.1%, p=0.016), while abdominal pain was more frequent (10 vs. 2.2%, p=0.029) in the probiotic group. The two groups were similar in treatment tolerance (p= 0.851). CONCLUSION: In over all, our studied multi strain probiotic compound has not beneficial effects in the treatment of *H. pylori* infection. It might be related to the low dosage of our probiotic regimen and /or high frequency of upper gastrointestinal adverse effects which in term could decrease the eradication efficiency.

3694 SAIFI, M.; JABBARZADEH, E.; BAHRMAND, A. R.; KARIMI, A.; POURAZAR, S.; FATEH, A.; MASOUMI, M.; VAHIDI, E. **HSP65-PRA identification of non-tuberculosis mycobacteria from 4892 samples suspicious for Mycobacterial infection.** *Clinical microbiology and infection* (2013) **19** (8) 723-728 Oxford, UK; Wiley Blackwell [En, 20 ref.] department of mycobacteriology, pasture institute of iran, no. 69, 12 Farvardin Avenue, Tehran, Iran. Email: e.jabbarzadeh@yahoo.com

Various molecular methods have been used for rapid identification of Mycobacterial species. In this survey evaluation of antibiotic resistance and PCR restriction fragment length polymorphism analysis (PRA) of the hsp65 gene was the carried out for identification of non tuberculosis mycobacteria (NTM) isolates from different clinical specimen. Forty-eight different Mycobacterial isolates were selected and followed by the conventional and PRA of hsp65 for species identification. The antibiotic susceptibility test was carried out according to standard method. A 439bp PCR product of hsp65 in all selected isolates was amplified and digested with the BstE II and Hae III restriction enzymes. The restriction fragment length polymorphism (RFLP) patterns were analyzed for species identification. Using PRA for 48 Mycobacterial selected isolates, including 15 *M. tuberculosis*, one *M. bovis* and all 32 isolates of NTM, revealed eleven different species among the NTN isolates. The most frequent NTM isolates were *M. kansasii*, *M. gordonade III*, *M. marinum*, *M. chelonae*, *M. scrofluaceun* *M. gastri*. In most cases, the PRA results were perfectly in accordance with the classical biochemical methods. Combination of resistance to rifampicin and isoniazid was present among *M. kansasii*, *M. gordoniae III*, *M. scrofluaceun*, *M. chelonae*, *M. marinum*, *M. gastari*, *M. gordoniae II* *M. trivale* isolates. A high incidence of coresistance to six, five, four, and three anti-TB drugs was observed in 18.5%, 9.1%, 6.6% and 11.7% of all NTM isolates respectively. our results showed that PRA, in comparison with classical method, is rapid and accurate enough for identification of Mycobacterial species from LJ medium. Additionally, we found that in Iran we have a highly diverse population of NTM isolates among patient suspected of having TB.

3695 KERKHOFF, A.D.; ANKUR, GUPTA; SAMANDARI, T.; LAWN, S. D. **The proportions**

of people living with HIV in low and middle-income countries who test tuberculin skin test positive using either a 5 mm or a 10 mm cut-off: a systematic review. *BMC Infectious Diseases* (2013) **13** (307) (8 July 2013) London, UK; BioMED Central Ltd [En, 43 ref.] School of Medicine and Health Sciences, The George Washington university, Washington, Dist. of Columbia, USA. Email: andrewkerkhoff@gmail.com

BACKGROUND: A positive tuberculin skin test (TST) is often defined by skin indurations of ≥ 10 mm in people who are HIV-seronegative. However, to increase sensitivity for detection of *Mycobacterium tuberculosis* infection in the context of impaired immune function, a revised cut-off ≥ 5 mm is used for people living with HIV infection. The incremental proportion of patients who are included by this revised definition and the association between this proportion and CD4+ cell count are unknown. **METHOD:** the literature was systematically reviewed to determine the proportion of living people with HIV (PLWH) without evidence of active tuberculosis in low and middle-income countries who tested TST-positive using cut off of ≥ 5 mm and ≥ 10 mm of indurations. The difference in the proportion testing TST-positive using two cut off sizes was calculated for all eligible studies and was stratified by geographical region and CD4 cell count. **RESULTS:** A total of 32 studies identified meeting criteria were identified, providing data on 10,971 PLWH from sub Saharan Africa, Asia and the Americans. the medium proportion of PLWH testing TST-positive using a cut off ≥ 5 mm was 26.8% (IQR, 19.8-46.1%; range 2.5-81.1%) using a cut off ≥ 10 mm, the medium proportion of PLWH testing-positive TST positive was 19.6% (IQR, 3.3-10.1%; range 0-37.6%) among those with CD4 cell count <200 , 200-499 and ≥ 500 cells/ul, the proportion of positive tests defined by the ≥ 5 mm cut off that

were between 5.0 and 9.9 mm in diameter was similar (12.5%, 12.9% and 10.5%, respectively). CONCLUSION: There is a small incremental yield in the proportion of PHWL who test TEST-positive when using an indurations cut-off size of ≥ 5 mm compared to ≥ 10 mm this proportion was similar across the range of CD4+ cell strata, supporting the current standardization of this cut-off at all levels of immunodeficiency.

3696 ABDUL QAYYUM KHAN; AMAN WAKO; BELAYNESH AYALEW; MEDHANIT TEERA; YEWORKWUHA TADESSE **Prevalence of tuberculosis in males and females in Arba Minch town of South Ethiopia.** *Journal of Medical Sciences (Pakistan)* (2013) **13** (5) 396-400 Faisalabad, Pakistan; Asian Network for scientific information [En, 8 ref] Department of biology, Arba Minch University, Post Box No. 21, Arba Minch, Ethiopia.

Prevalence of tuberculosis disease in males and females was studied in Arba Minch of South Ethiopia from the records of Arba Minch hospital for four years from 2006 to 2009. The patients were classified as TB suspected and TB positive cases which were divided into ten yearly different age groups. In infant group up to 10 years, the TB suspected cases were 9 to 10% and positive TB patients were 2 to 6% in both males and females. The percentages of TB positive and suspected patients were high in both males and females in age group of 11-20 years ranging from 20 to 27% which increased to the maximum of 33 to 37% in age group of 21-30 years and decreased thereafter, ranging between 10-20% in age group of 31 to 40 years. In subsequent age groups of 41-40 and 51-60 years. The number and percentage of patients decelerated from 7% in age group from 41-50 years followed by elderly age groups of 61-70, 71-80 and 81-90 years. The total number of suspected and positive patient during 4 years were, 1141 and 299 in males and 740 and 175 in

females. The percentage of positive TB patient out of the suspected once over the years were, 26.20 in males and 23.64 in females. Of the total positive patient over 4 years, however, 67.29% were males and 72.71% females. Thus the number and percentage of TB patient were higher in males than the females. The result indicated that the TB disease was more prevalent in males than the females in and around Arba Minch town of South Ethiopia. The reasons for males being more affected with TB than females were not known. The greater mobility of males could possibly lead to getting higher infection by coming into contact with the TB patients and or the males were more prone to infection to this disease. However, it needs to be investigated for finding the reasons for more prevalence of TB in males than females.

3697 HUYEN, M.N.T.; COBELENS, F.G.J.; BUU, T.N.; LAN, N.T.N.; DUNG, N.H.; KREMER, K.; TIMERSMA, E.W.; SOOLINGEN, D. VAN **Epidemiology of isoniazid resistance mutation and their effect on tuberculosis treatment outcomes.** *Antimicrobial Agents and Chemotherapy* (2013) **57** (8) 3620-3627 Washington, USA; American Society for Microbiology (ASM) [En.37 ref.] pham Ngoc Thach hospital, Ho Chi Minh City, Vietnam. Email: dick.van.soolingen@rivm.nl

Isoniazid resistance is highly prevalent in Vietnam. We investigated the molecular and epidemiological characteristics and the association with first-line treatment outcomes of the main isoniazid resistance mutations in *Mycobacterium tuberculosis* in codon 315 of the katG and in the promoter region of the inhA gene. *M. tuberculosis* strains with phenotypic resistance to isoniazid from consecutively diagnosed smear positive tuberculosis patients in rural Vietnam were subjected to genotype MTBDR plus testing to identify katG and inhA

mutation, treatment failure and relapse were determined by sputum culture. In total 227 of 251 isoniazid resistance strains (90.4%) had detectable mutations: 75.3% in *katG* codon 315 (*katG*₃₁₅) and 28.2% in the *inhA* promoter region. *katG*₃₁₅ mutations were significantly associated with pretreatment resistance to streptomycin, rifampin and ethambutol but not with the Beijing genotype and predicted both unfavourable treatment outcomes (treatment failure or death) and relapse; *inhA* promoter region mutation were only associated with resistance to streptomycin and relapse. In tuberculosis patients, *M. tuberculosis katG*₃₁₅ mutations but not *inhA* mutations are associated with unfavourable treatment outcome. *inhA* mutations do, however, increase the risk of relapse, atleast with treatment regimens that contain only isoniazid and ethambutol in the continuation phase.

3698 MHMOUD, N.A.; FAHAL, A.H.; SANDE <W.W.J. VAN de **The association between the interleukin-10 cytokine and CC chemokine Ligand % polymorphisms and mycetoma granuloma formation.** *Medical Mycology* (2013) **51** (5) 527-533 Stockholm, Sweaden; Informa Healthcare [En, 21 ref.] Mycetoma Research Center University of khartum, Khartum Sudan. Email: w.vandesande@erasmusmc.nl

Mycetoma is a progressive and destructive chronic granulomatous subcutaneous inflammatory disease caused by bacteria and fungi. The genetic determinates for susceptibility to and the development of mycetoma are unclear. Polymorphism in genes encoding for cytokines and chemokines usually influence the efficiency of the immune response to infection and are associated with diseases susceptibility and progression. Therefore, we hypothesized that polymorphism of CC chemokine Ligand 5(CCL5) and interleukin-10 (IL-10) promoter region might contribute to the initiation, susceptibility and

severity of eumycetoma. This case control study included 149 mycetoma patients and 206 healthy matched controls. In the study populations, three functional single nucleotide polymorphism (SNPs) in CCL-5 and two in IL-10 were genotyped using polymerase chain reaction and restriction fragment length polymorphism (PCR RFLP). Significant differences in allele distribution were demonstrated for CCL5-28 C/G ($p < 0.0001$), CCL5 In 1.1 T/C ($P < 0.0001$) and IL10-592 A/C. Since in previous studies it was demonstrated that the genotypes obtained for CCL5 and IL-10 were found in mycetoma patients and we describe that genetic differences in CCL5 and IL-10 are associated with the development of the mycetoma granuloma.

3699 TRAN, H.T.T.; BERGH, R. VANDEN; LOEMBE, M.M.; WORODRIA, W.; MAYANJAKIZZA, H.; COLEBUNDERS, R.; MAS CART, F.; STORDEUR, P.; KESTENS, L.; BAETSELIER, P.DE' RAES, G. **Modulation of the complement system in monocytes contributes to tuberculosis-associated immune reconstitution inflammatory syndrome.** *AIDS* (2013) **27** (11) 1725-1733 Hagerstown, USA; Lippincott Williams & Wilkins, Inc. [En, 28 ref.] Cellular and molecular immunology Unit, Vrije Universiteit Brussel, Pleinlaan 2, Building E, 8th Floor, B-1050 Brussels, Belgium. Email: Geert.Raes@vib-vub.be

OBJECTIVE: Tuberculosis Associated Immune Reconstitution Inflammatory Syndrome (TB-IRIS) is a common complication in HIV-TB co-infected patients receiving combined antiretroviral therapy (cART). This study investigated a putative contribution of monocytes to the development of TB-IRIS. DESIGN: a prospective study was designed to compare gene expression between patients who developed TB-IRIS with matched non-TB –IRIS controls. METHODS: we performed a hypothesis-generating transcriptome analysis on monocytes of HIV-TB co-infected patients,

identified pathways were subsequently analysed in patients' monocytes before and shortly after c ART initiation, in a technically independent set-up (n Counter). Additionally, protein expression and enzymatic activities of specific factors were assessed at the systematic level. RESULTS: Pathways analysis of microarray datasets and focused gene expression study revealed that, even before initiation of c ART, the complement system is dys regulated in HIV-TB co-infected patients who are predisposed to developing TB-IRIS. Detailed analysis revealed differences between TB-IRIS patients and matched non-TB-IRIS cases, at the level of the balance between the effector C1Q and inhibitor C1-INH, both before and 2 weeks after c ART initiation. These differences were mirrored by increases in the downstream pro-inflammatory complement factor C5 over the course of 2 weeks of c ART. Our results suggest that inappropriate control of complement activation could be associated with the 'flaring up' of inflammation observed during TB-IRIS. CONCLUSION: The current study reveals a contribution of monocytes and the complement system to TB-IRIS development. An intriguing possibility is that the development of TB-IRIS may depend partially on the relative balance between C1Q and C1-INH.

3700 TAHRIM ANSAR; MUHAMMAD TAHIR; LONE, K. P.; BUSHRA MUNIR **Immunolocalization of aquaporin-10 in tuberculous human ileum.** *JCPSP, Journal of the College of Physicians and Surgeons Pakistan* (2013) **23** (6) 392-396 Karachi, Pakistan; College of Physicians and Surgeons Pakistan [En, 25 ref.] Department of Anatomy, Centre Park Medical College, Lahore, Pakistan. Email: babaril@gmail.com

OBJECTIVE: To determine the presence of AQP-10 in the ileum of patients suffering from intestinal tuberculosis. STUDY DESIGN: A cross-sectional analytical study. PLACE AND DURATION OF

STUDY: Department of Anatomy, University of Health Sciences, Lahore, in year 2010. METHODOLOGY: Thirty seven paraffin embedded blocks of either surgically respected specimens or ilea biopsies with diagnosis of intestinal tuberculosis were selected from records of the histopathology departments of local hospitals. These cases were subdivided into two groups: A-1 (with tuberculous granulomatous lesions with or without epithelium) and A-2 (without tuberculous lesion lying adjacent to the lesions and having an intact epithelium). Specimens of small intestine with malignancy, Crohn's disease, inflammatory bowel disease, irritable bowel syndrome and diarrhoeal diseases caused by Rota virus, adenovirus, Salmonella, Shigella and *Escherichia coli* were excluded. The variables studied were the presence/absence and location of AQP-10. RESULTS: The most common clinical symptoms found in tuberculous patients were abdominal pain followed by diarrhoea. A significant association was found between AQP-10 and site of granulomas and caseation necrosis ($p=0.002$ and $p=0.006$ respectively). Absence of AQP-10 was observed in tuberculous ileum at the site of lesion with ulceration. A strong positive staining of AQP-10 was found in the intact epithelium at sites adjacent to the tuberculous lesion indicating its localization near the epithelial lining of ileum. CONCLUSION: AQP-10 was present only on the epithelial cells occurring at the luminal side of the villi and was absent in tuberculous ileum where epithelium was absent.

3701 ADAWIYAH JAMIE; NOOR, N.M.; OSMAN, A.S.; BASERI, M.M.; LEELAVATHI MUTHUPALA NIAPPEN **Primary dapsone resistant *Mycobacterium leprae* in a non endemic country.** *Indian Journal of Dermatology, Venereology & Leprology* (2013) **79** (4) 527-528 Mumbai, India; Medknow Publications [En] Department of Medicine, University Kebangsaan

Malaysia Medical Center, Bandar Tun Razak, Cheras-56000 Kuala Lumpur, Malaysia.

This study evaluated dapson resistance in 457 leprosy cases from Malaysia which were referred to an Indian reference laboratory. Of these cases, 362 were newly diagnosed multibacillary leprosy patients and 95 were patients with relapsed disease or treatment problems. Their median age was 37 years (range, 6-85 years) and 290(80.1%) were males. Specimens from 271 (74.9%) patients were successfully cultured and tested. Overall, 60 (22.1%) were identified to have intermediate and high level dapson resistance, while low level dapson resistance was observed in 83 (31%) cases. Of the cases with intermediate or high resistance, majority of the patients were Malaysians (66%), followed by Indonesians (27%), Myanmarese (3.4%) and Nepalese (1.7%).

3702 COSTA, A.R.F.DA; FALKINHAM, J.O., III; LOPES, M.L.; BARRETTO, A.R.; FELICIO, J.S.; SALES, L.H.M.; BAHIA, J.R. DA C-; CONCEIOO, E.C.; LIMA, K.V.B. **Occurrence of nontuberculous mycobacterial pulmonary infection in an endemic area of tuberculosis.** *PLoS Neglected Tropical Diseases* (2013) **7** (7) e2340 San Francisco, USA; Public Library of Sciences (PLoS) [En, 58 ref.] Bacteriology and Mycology Section,

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The majority of investigations of the epidemiology of nontuberculous mycobacteria (NTM) have focused on highly developed nations with a low prevalence of tuberculosis. In contrast, the Para state of north Brazil represents an area of high tuberculosis prevalence and increasing NTM incidence. Toward the goal of understanding the dynamics of infection by all *Mycobacterium* species, we report patient characteristics and the identification of NTM strains isolated from sputum samples from patients that were residents of Para, a state in the Amazon region, Northern of Brazil, over the period January 2010 through December 2011 (2 years). The 29 NTM patients comprised 13.5% of positive mycobacterial cultures over the 2-year period. A major risk factor for NTM pulmonary disease was previous tuberculosis (76%). Further, the average age of NTM patients (52 years) was significantly higher than that of tuberculosis patients (39 years) and more were female (72.4% vs. 37.4%). Unlike other Brazilian states, NTM pulmonary patients in Para were infected with a different spectrum of mycobacteria; primarily the rapidly growing *Mycobacterium massiliense* and *Mycobacterium simiae* complex.