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TB Clinic

Evidence Update

November 2017 (Quarterly)

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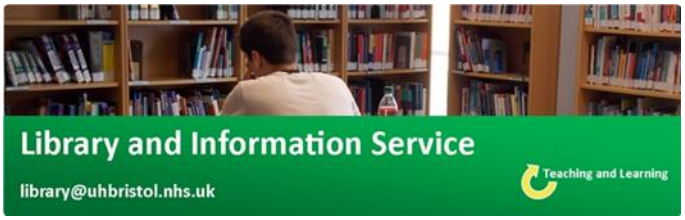

Training Calendar 2017

All sessions are one hour

November (13.00)

2nd Thu	**Literature Searching**
10th Fri	**Critical Appraisal**
13th Mon	**Statistics**
21st Tues	**Literature Searching**
29th Wed	**Critical Appraisal**

December (12.00)

7th Thu	**Statistics**
15th Fri	**Literature Searching**

Your Outreach Librarian: Jo Hooper

Whatever your information needs, the library is here to help. As your outreach librarian I offer **literature searching services** as well as training and guidance in **searching the evidence** and **critical appraisal** – just email me at library@uhbristol.nhs.uk

OUTREACH: Your Outreach Librarian can help facilitate evidence-based practise for all in the Orthopaedics team, as well as assisting with academic study and research. We can help with **literature searching, obtaining journal articles and books**, and setting up individual **current awareness alerts**. We also offer one-to-one or small group training in **literature searching, accessing electronic journals, and critical appraisal**. Get in touch: library@uhbristol.nhs.uk

LITERATURE SEARCHING: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a one-to-one session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence.

Contents

Updates

NICE National Institute for Health and Care Excellence

WHO | Tuberculosis
Source: World Health Organization - 30 October 2017

Georgia. Highlights on health and well-being (2017) [PDF]
Source: WHO Regional Office for Europe - WHO Europe - 26 October 2017

The tuberculosis report for heads of state and governments: Global plan to end TB 2016-2020 [PDF]
13 October 2017 - Publisher: Stop TB Partnership Read Summary

Lopinavir plus nucleoside reverse-transcriptase inhibitors, lopinavir plus raltegravir, or lopinavir monotherapy for second-line treatment of HIV (EARNEST): 144-week follow-up results from a randomised controlled trial
03 November 2017 - Publisher: The Lancet Infectious Diseases

BNF Tuberculosis | Treatment summary
Source: British National Formulary - BNF - 25 October 2017

BNF for children Tuberculosis | Treatment summary
Source: British National Formulary for Children - BNFc - 25 October 2017

Tuberculosis in England: annual report
Source: Public Health England - Source: GOV UK - 24 October 2017

Genetics of human susceptibility to active and latent tuberculosis: present knowledge and future perspectives
27 October 2017 - Publisher: The Lancet Infectious Diseases Read Summary

Cochrane Library

Linezolid for drug-resistant tuberculosis
Bhagteshwar Singh , Derek Cocker , Hannah Ryan and Derek J Sloan
Online Publication Date: November 2017

Implementation strategies for health systems in low-income countries: an overview of systematic reviews
Tomas Pantoja , Newton Opiyo , Simon Lewin , Elizabeth Paulsen , Agustín Ciapponi
Online Publication Date: September 2017
Interventions for treating tuberculous pericarditis
Charles S Wiysonge , Mpiko Ntsekhe , Lehana Thabane , Jimmy Volmink ,
Online Publication Date: September 2017

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OpenAthens login required. Register here: https://openathens.nice.org.uk/

Diagnosis of pulmonary tuberculosis in HIV-uninfected adults
- Summary and recommendations

Literature review current through: Oct 2017. | **This topic last updated:** Oct 05, 2017.

Tuberculosis disease in children
- Summary and recommendations

Literature review current through: Oct 2017. | **This topic last updated:** Sep 26, 2017.

Treatment of drug-resistant pulmonary tuberculosis in adults
- Summary and recommendations

Literature review current through: Oct 2017. | **This topic last updated:** Oct 02, 2017.

Epidemiology of extensively drug-resistant tuberculosis
- Summary and recommendations

Literature review current through: Oct 2017. | **This topic last updated:** Feb 02, 2017.

Journal Tables of Contents

Click on the hyperlinked journal title or image (+Ctrl) for the most recent tables of contents. If you would like any of these papers in full text then get in touch: library@uhbristol.nhs.uk

European Respiratory Journal

October 2017; volume 50, issue 4

Thorax

November 2017; Volume 72, issue 11

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Recent Database Articles related to Tuberculosis Treatment

Below is a selection of articles related to orthopaedics recently added to the healthcare databases.

Drugs and Multidrug-resistance

Cost-effectiveness analysis of adding new drug thiozonide to IV-Th drug regimens for multidrug-resistant tuberculosis

Author(s): Krysanov I.; Ermakova V.; Tiapkina M.

Source: Value in Health; 2017; vol. 20 (no. 9)

Publication Type(s): Conference Abstract

Abstract: Objectives: to build a model, including clinical characteristics of patients with multidrug-resistant tuberculosis (MDR-TB), and estimate healthcare costs and efficacy of therapy MDR-TB in Russian. Methods: a cohort-based Markov cost-effectiveness model was developed to estimate the incremental cost-efficacy ratio (ICER) of adding new drug thiozonide (200 mg, 400 mg, 600 mg + IV-th drug regimen) to IV-th drug regimen (involving 8 months Cm Lfx Z Cs/Trd PAS Pto/Eto + 12-18 month Lfx Z PAS Cs/Trd (Pto/Eto) for the treatment of MDR-TB. As clinical research currently ongoing and there is no efficacy data on thiozonide, for the early economic evaluation the assumption was made that thiazonide will be not less efficacy than bedaquilline (assumption based on their similar chemical molecule). Outcome measures were quality-adjusted life years (QALY) and disability-adjusted Life Year (DALY). The model used a 3-year time horizon and 3 month cycle length. Willingness to pay threshold (WTP) for Russian health care system was estimated at 26,383 (1648924 RUB), exchange rate mean in 2017 - 1 = 62.5 RUB. Results: applying the base case settings resulted in 1.15 incremental QALYs, -4.75 incremental DALYs, and incremental costs of 1,654.74, 3,309.5 and 4,964.2 (103421, 206841, 310262 RUB) for thiozonide 200/400/600 mg dosages regimen respectively compared with the fourth treatment regimen alone. Incremental cost-efficacy ratio (ICER) evaluated at 1,438.9, 2,877.8 and 4,964.2 (89931, 179862, 269793 RUB) per QALY gained and 362.1, 724.2, 1,086.3 (22630, 45261, 67891 RUB) per DALY for 200/400/600 mg dosages regimen or thiozonide respectively. According to non-official WTP threshold of 26,383 (1648924 RUB) adding thiozonide to IV drug regimens therapy of MDR-TB will be cost-effective versus IV-th drug regimens alone. Conclusions: using the model the user can enter their own data (sample size, efficacy, relapse and mortality rate) for the early economic evaluation of the new drug for multidrug-resistant tuberculosis treatment.

Synthesis and evaluation of analogues of the tuberculosis drug bedaquiline containing heterocyclic B-ring units

Author(s): Choi P.J.; Sutherland H.S.; Tong A.S.T.; Blaser A.; Denny W.A.; Palmer B.D.; Franzblau S.G.;

Source: Bioorganic and Medicinal Chemistry Letters; 2017

Publication Type(s): Article In Press

Abstract: Analogues of bedaquiline where the phenyl B-unit was replaced with monocyclic heterocycles of widely differing lipophilicity (thiophenes, furans, pyridines) were synthesised and evaluated. While there was an expected broad positive correlation between lipophilicity and anti-TB activity, the 4-pyridyl derivatives appeared to have an additional contribution to antibacterial potency. The majority of the compounds were (desirably) more polar and had higher rates of clearance than bedaquiline, and showed acceptable oral bioavailability, but there was only limited (and unpredictable) improvement in their hERG liability.Copyright © 2017.

Molecular epidemiology of multi- and extensively-drug-resistant Mycobacterium tuberculosis in Ireland, 2001-2014

Author(s): Roycroft E.; Fitzgibbon M.M.; Montgomery L.; Rogers T.R.; O'Toole R.F.; O'Meara M.

Source: Journal of Infection; 2017

Publication Type(s): Article In Press

Abstract: Objectives: The primary objective of this work was to examine the acquisition and spread of multi-drug resistant (MDR) tuberculosis (TB) in Ireland. Methods: All available Mycobacterium tuberculosis complex (MTBC) isolates (n = 42), from MDR-TB cases diagnosed in Ireland between 2001 and 2014, were analysed using phenotypic drug-susceptibility testing, Mycobacterial-Interspersed-Repetitive-Units Variable-Number Tandem-Repeat (MIRU-VNTR) genotyping, and whole-genome sequencing (WGS). **[ABSTRACT EDITED]**

Performance of the GenoType MTBDRsl assay for the detection second-line anti-tuberculosis drug resistance

Author(s): Lee Y.S.; Lee B.Y.; Jo K.-W.; Shim T.S.

Source: Journal of Infection and Chemotherapy; 2017

Publication Type(s): Article In Press

Abstract: The rapid detection of drug-resistant tuberculosis (TB) is important to improve treatment outcomes and prevent disease transmission. The GenoType MTBDR. sl assay (MTBDR. sl assay) was developed to detect fluoroquinolone (FQ) and second-line injectable drug (SLID) resistance. The aim of this study was to evaluate the performance and clinical utility of MTBDR. sl assay. **[ABSTRACT EDITED]**

Extensively drug-resistant tuberculosis - Problem of the XXI Century

Author(s): Farajova S.A.; Hamzayeva R.I.

Source: Azerbaijan Medical Journal; 2017 (no. 3); p. 127-132

Publication Type(s): Article

Abstract: The article reviews the scientific literature dedicated to tuberculosis and extensively drugresistant Mycobacterium tuberculosis, during which the compounded the human immunodeficiency virus. These categories of patients is a serious threat, because they are poorly amenable to anti-TB therapy and for a long time are still MBT excretion, there by worsen the epidemic situation. To prevent this problem it is necessary timely detection of patients with drug-resistant strains of the pathogen and carrying out the correct choice of chemotherapy regimens.

Prevalence and treatment outcome of extensively drug-resistant tuberculosis plus additional drug resistance from the National Clinical Center for Tuberculosis in China: A five-year review

Author(s): Pang Y.; Huo F.; Ma Y.; Zhao L.; Li Y.; Liang Q.; Huang H.; Lu J.; Chu N.; Gao M.

Source: Journal of Infection; 2017

Publication Type(s): Article In Press

Abstract: Objectives: The objective of this study was to explore the prevalence and primary clinical outcomes of extensively drug-resistant tuberculosis plus addition resistance to all drug tested (XDR-TB-Plus) between 2011 and 2015 in Beijing Chest Hospital. **[ABSTRACT EDITED]**

Study on drug resistance of Mycobacterium tuberculosis and its trend in Nantong

Author(s): Chen J.; Huang F.; Qu M.; Gu D.

Source: Biomedical Research (India); 2017; vol. 28 (no. 14); p. 6361-6364

Publication Type(s): Article

Abstract: Objective: This study aims to explore drug resistance of Mycobacterium tuberculosis (TB) and its trend in Nantong. Methods: From January 2012 to December 2016, a total number of 1100 TB strains were collected from 1100 patients. To determine their drug resistant characteristics, all strains were treated with anti-tuberculosis drugs, including Ethambutol (EMB), Li Fuping (RFP), Isoniazid (INH) and Streptomycin (SM). Afterwards, the distribution of drug resistant strains in patients was analysed and the trend was profiled. **[ABSTRACT EDITED]**

Burden of tuberculosis among household children of adult multi drug resistant patients and their response to first line anti tubercular drugs

Author(s): Mazahir R.; Beig F.K.; Alam S.; Ahmed Z.

Source: Egyptian Pediatric Association Gazette; 2017

Publication Type(s): Article In Press

Abstract: Objective: The objective of the study was to find the prevalence and incidence of tuberculosis among household contacts of adult Multi Drug Resistant-tuberculosis (MDR-TB) patients and to evaluate their response to first line anti-tubercular drugs. Materials and methods: This prospective observational study was conducted from January 2014 to August 2015 at a tertiary care center in India. We included child contacts of Copyright © 2017.

A study on Beijing genotype in the clinical isolates of pulmonary drug-resistant tuberculosis

Author(s): Kumar A.; Verma A.K.; Kant S.; Prakash V.; Srivastava A.; Srivastava K.; Jain A.;

Source: Lung India; 2017; vol. 34 (no. 5); p. 430-433

Publication Type(s): Article

Available at Lung India : official organ of Indian Chest Society - from Europe PubMed Central - Open Access

Abstract: Background: Mycobacterium tuberculosis (MTB) Beijing strains are spread worldwide and are responsible for major outbreaks of tuberculosis (TB), sometimes spreading multidrug resistance (MDR). Aim: The aim of this study was to explore clinical features associated with the infection with Beijing strains among MDR patients of pulmonary TB in Lucknow and surrounding areas. **[ABSTRACT EDITED]**

Combination of commercially available molecular assays and culture based methods in diagnosis of tuberculosis and drug resistant tuberculosis.

Author(s): Gkaravela, Lamprini; Papadimitriou-Olivgeris, Matthaios; Foka, Antigoni;

Source: Brazilian journal of microbiology : [publication of the Brazilian Society for Microbiology]; 2017; vol. 48 (no. 4); p. 785-790

Publication Type(s): Journal Article

Available at Brazilian Journal of Microbiology - from Europe PubMed Central - Open Access

Abstract: Early diagnosis of tuberculosis is of major clinical importance. Among 4733 clinical specimens collected from 3363 patients and subjected to Ziehl-Neelsen microscopy, 4109 were inoculated onto Löwenstein-Jensen slants and 3139 in Bactec/9000MB. Polymerase Chain Reaction (PCR) was performed in 3139 specimens, whereas, a genotypic assay was directly applied in 93 Mycobacterium tuberculosis complex PCR-positive for isoniazid and rifampicin resistance detection specimens (GenoType MTBDRplus). Recovered M. tuberculosis isolates (64) as well as, 21 more sent from Regional Hospitals were tested for antimycobacterial resistance with a phenotypic (manual MGIT-SIRE) and a genotypic assay (GenoType MTBDRplus). PCR in the clinical specimens showed excellent specificity (97.4%) and accuracy (96.8%), good sensitivity (70.4%), but low positive predictive value (40.3%). MGIT-SIRE performed to M. tuberculosis did not confer a reliable result in 16 isolates. Of the remaining 69 isolates, 15 were resistant to streptomycin, seven to isoniazid, seven to ethambutol and five to rifampicin. GenoType MTBDRplus correctly detected isoniazid (seven) and rifampicin-resistant M. tuberculosis strains (five), showing an excellent performance overall (100%). Susceptibility results by the molecular assay applied directly to clinical specimens were identical to those obtained from recovered isolates of the corresponding patients. Combining molecular and conventional methods greatly contribute to early diagnosis and accurate susceptibility testing of tuberculosis.

Screening mutations in drug-resistant Mycobacterium tuberculosis strains in Yunnan, China.

Author(s): Li, Daoqun; Song, Yuzhu; Zhang, Cheng-Lin; Li, Xiaofei; Xia, Xueshan; Zhang, A-Mei

Source: Journal of infection and public health; 2017; vol. 10 (no. 5); p. 630-636

Publication Type(s): Journal Article

Abstract: Drug-resistant tuberculosis (DR-TB), especially multidrug-resistant tuberculosis (MDR-TB), is a serious medical and societal problem in China. The purpose of this study was to evaluate the mutation characteristics of drug-resistant Mycobacterium tuberculosis (M. tuberculosis) isolates in Yunnan, China. **[ABSTRACT EDITED]**

Initial second-line drug resistance of Mycobacterium tuberculosis isolates from Sudanese retreatment-patients

Author(s): Adam M.A.M.; Ali H.M.H.; Khalil E.A.G.

Source: Journal of Clinical Tuberculosis and Other Mycobacterial Diseases; Dec 2017; vol. 9 ; p. 21-23

Publication Type(s): Article

Abstract: Setting Multidrug-resistant tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB) are a major public health threat. Objective This study aimed to determine resistance patterns to second line anti-TB drugs (SLDs), and to determine the frequency of extensively drug resistant Mycobacterium tuberculosis (XDR-TB). **[ABSTRACT EDITED]**

Genetic diversity of Mycobacterium tuberculosis and transmission associated with first-line drug resistance: a first analysis in Jalisco, Mexico

Author(s): Lopez-Avalos G.; Gonzalez-Palomar G.; Miranda-Hernandez U.; Alvarez-Maya I.

Source: Journal of Global Antimicrobial Resistance; Dec 2017; vol. 11 ; p. 90-97

Publication Type(s): Article

Abstract: Objectives The objectives of this study were to analyse the frequency of gene mutations associated with antitubercular drug resistance in clinical samples from the population of Jalisco State (Mexico) and to evaluate the genetic variability of Mycobacterium tuberculosis and multidrug-resistant (MDR) M. tuberculosis strains to describe the frequency of various families. **[ABSTRACT EDITED]**

Trends and characteristics of drug-resistant tuberculosis in rural Shandong, China

Author(s): Tao N.-N.; Liu Y.; Li H.-C.; He X.-C.; Zhang X.-X.; Yu C.-B.

Source: International Journal of Infectious Diseases; Dec 2017; vol. 65 ; p. 8-14

Publication Type(s): Article

Abstract: Objectives The aim of this study was to describe the secular trends in drug-resistant tuberculosis (DR-TB) and to identify unique characteristics of multidrug-resistant tuberculosis (MDR-TB) in rural China. Methods A retrospective study was conducted using TB data collected from 36 TB prevention and control institutions serving rural populations in Shandong Province, China, for the period 2006-2015. **[ABSTRACT EDITED]**

Whole genome sequencing for the management of drug-resistant TB in low income high TB burden settings: Challenges and implications

Author(s): Mahomed S.; Naidoo K.; Dookie N.; Padayatchi N.

Source: Tuberculosis; Dec 2017; vol. 107 ; p. 137-143

Publication Type(s): Review

Abstract: Drug-resistant tuberculosis is emerging as a major global health challenge, fuelled by a limited formulary and reduced ability to timeously diagnose resistance. Furthermore, poorly managed drug-resistant tuberculosis is complicated by poor treatment outcomes and high rates of morbidity and mortality. A rapid diagnosis together with individualized management are essential in order to limit disease and curtail transmission. **[ABSTRACT EDITED]**

Evaluation of the genotype MTBDRsl test for detection of second-line drug resistance in drug-resistant Mycobacterium tuberculosis strains in Myanmar

Author(s): Nyunt W.W.; Aung S.T.; Cook G.M.; Aung H.L.

Source: Infectious Diseases; Dec 2017; vol. 49 (no. 11); p. 865-866

Publication Type(s): Letter

Single nucleotide polymorphisms in efflux pumps genes in extensively drug resistant Mycobacterium tuberculosis isolates from Pakistan

Author(s): Kanji A.; Hasan R.; Zaver A.; Imtiaz K.; Rao S.; Shafiq S.; Hasan Z.; Clark T.G.; Phelan J.

Source: Tuberculosis; Dec 2017; vol. 107 ; p. 20-30

Publication Type(s): Article

Abstract: It is challenging to understand mechanisms of drug resistance in Mycobacterium tuberculosis (MTB) due to the large variability in resistance associated genes. Efflux pump genes contribute to drug resistance and thus add to this complexity. Efflux pump gene protein superfamilies have been characterized by genome analysis of drug resistant strains and through in vitro transcriptional studies. However, there is limited information regarding efflux pump genes in extensively drug resistant (XDR) tuberculosis (TB) isolates. Whole genome sequencing (WGS) based analysis of 37 extensively drug resistant (XDR) and five drug sensitive (DS) MTB clinical isolates was

performed. Single nucleotide polymorphisms (SNPs) in efflux pump genes Rv0194, Rv1217, Rv1218, drrA, drrB, Rv1258, Rv1634, Rv2688, Rv1273, Rv1819, Rv1458, Rv1877 and Rv1250 were determined in the clinical isolates as compared with the H37Rv reference strain. Allele frequencies of SNPs identified in XDR strains were compared with DS strains. Gene expression of Rv0194, Rv2688, Rv1634, drrA and drrB was determined in XDR -TB isolates (n = 9), DS-TB strains (n = 4) and H37Rv. We identified SNPs in XDR-TB isolates which were either unique or present at very low frequencies in DS strains; Rv0194 G170V; Rv1217 L151R; Rv1258 P369T and G391R; Rv1273 S118G and I175T; Rv1877 I534T; Rv1250 V318X/A and S333A, and Rv2688 P156T. The expression of Rv2688 and drrB was found to be raised in XDR-TB as compared with DS-TB strains. We identified unique SNPs in efflux pump genes which may be associated with increased drug resistance in the isolates. Increased levels of Rv2688 and drrB efflux pump gene expression observed in XDR strains even in the absence of antibiotics suggests that these clinical isolates may be more refractory to treatment. Further studies are required to directly associate these mutations with increased resistance in MTB.

Prevalence of Beijing and Haarlem genotypes among multidrug-resistant Mycobacterium tuberculosis in Iran: Systematic review and meta-analysis

Author(s): Tarashi S.; Fateh A.; Rahimi Jamnani F.; Siadat S.D.; Vaziri F.

Source: Tuberculosis; Dec 2017; vol. 107 ; p. 31-37

Publication Type(s): Review

Abstract: Antimicrobial drug resistance creates major problems in the control of tuberculosis (TB). Beijing and Haarlem genotypes of Mycobacterium tuberculosis are the prevalent genotypes responsible for multidrug resistant (MDR) TB worldwide. The aim of this study was to conduct a systematic review using meta-analysis to indicate the prevalence of Beijing and Haarlem genotypes among MDR-TB cases in Iran. **[ABSTRACT EDITED]**

Whole genome sequencing of clinical strains of Mycobacterium tuberculosis from Mumbai, India: A potential tool for determining drug-resistance and strain lineage

Author(s): Chatterjee A.; Nilgiriwala K.; Saranath D.; Mistry N.; Rodrigues C.

Source: Tuberculosis; Dec 2017; vol. 107 ; p. 63-72

Publication Type(s): Article

Abstract: Amplification of drug resistance in Mycobacterium tuberculosis (M.tb) and its transmission are significant barriers in controlling tuberculosis (TB) globally. Diagnostic inaccuracies and delays impede appropriate drug administration, which exacerbates primary and secondary drug resistance. Increasing affordability of whole genome sequencing (WGS) and exhaustive cataloguing of drug resistance mutations is poised to revolutionise TB diagnostics and facilitate personalized drug therapy. However, application of WGS for diagnostics in high endemic areas is yet to be demonstrated. We report WGS of 74 clinical TB isolates from Mumbai, India, characterising genotypic drug resistance to first- and second-line anti-TB drugs. **[ABSTRACT EDITED]**

Applied multiplex allele specific PCR to detect second-line drug resistance among multidrug-resistant tuberculosis in China

Author(s): Liang Y.-P.; Chen Y.; Xiao T.-Y.; Liu H.-C.; Zhao X.-Q.; Zhao L.-L.; Wan K.-L.; Xia Q.

Source: Tuberculosis; Dec 2017; vol. 107 ; p. 1-4

Publication Type(s): Article

Abstract: Rapid detection of resistance to the second-line drugs is essential for early initiation of appropriate anti-tubercular treatment regimen among multi-drug tuberculosis (MDR-TB). In this study, we applied a multiplex allele-specific PCR (MAS-PCR) to identify the mutations on codons 90 and 94 of gyrA and nucleotide 1401 of rrs for detecting ofloxacin (OFX) and kanamycin (KAN) resistance in 139 MDR-TB isolates from China. Using the traditional phenotypic method as the reference, MAS-PCR detected resistance to OFX and KAN with sensitivities of 67.3% and 76.5%, respectively, and specificities of 100.0%. Therefore, MAS-PCR assays can be used for rapid detection of second-line drug resistance among MDR-TB in China, enabling early administration of appropriate treatment regimens to the affected MDR-TB patients.Copyright © 2017 Elsevier Ltd

Factors affecting outcomes of individualised treatment for drug resistant tuberculosis in an endemic region

Author(s): Saha A.; Vaidya P.J.; Chavhan V.B.; Pandey K.V.; Kate A.H.; Leuppi J.D.; Tamm M.

Source: Indian Journal of Tuberculosis; Dec 2017

Publication Type(s): Article In Press

Abstract: Background: Individualised treatment regimens for drug resistant tuberculosis have improved outcomes. This retrospective observational study examined potential factors that affect individualised treatment in an endemic region, and highlighted predictors of a successful outcome. **[ABSTRACT EDITED]**

β-CA-specific inhibitor dithiocarbamate Fc14-584B: a novel antimycobacterial agent with potential to treat drug-resistant tuberculosis.

Author(s): Aspatwar, Ashok; Hammarén, Milka; Koskinen, Sanni; Luukinen, Bruno; Barker, Harlan;

Source: Journal of enzyme inhibition and medicinal chemistry; Dec 2017; vol. 32 (no. 1); p. 832-840

Publication Type(s): Journal Article

Available at Journal of Enzyme Inhibition and Medicinal Chemistry - from EBSCO (MEDLINE Complete)

Abstract: Inhibition of novel biological pathways in Mycobacterium tuberculosis (Mtb) creates the potential for alternative approaches for treating drug-resistant tuberculosis. In vitro studies have shown that dithiocarbamate-derived β-carbonic anhydrase (β-CA) inhibitors Fc14-594 A and Fc14-584B effectively inhibit the activity of Mtb β-CA enzymes. We screened the dithiocarbamates for toxicity, and studied the in vivo inhibitory effect of the least toxic inhibitor on M. marinum in a zebrafish model. In our toxicity screening, Fc14-584B emerged as the least toxic and showed minimal toxicity in 5-day-old larvae at 300 µM concentration. In vitro inhibition of M. marinum showed that both compounds inhibited growth at a concentration of 75 µM. In vivo inhibition studies using 300 µM Fc14-584B showed significant ($p > .05$) impairment of bacterial growth in zebrafish larvae at 6 days post infection. Our studies highlight the therapeutic potential of Fc14-584B as a β-CA inhibitor against Mtb, and that dithiocarbamate compounds may be developed into potent anti-tuberculosis drugs.

The TB portals: An open-access, web-based platform for global drug-resistant- tuberculosis data sharing and analysis

Author(s): Rosenthal A.; Gabrielian A.; Engle E.; Hurt D.E.; Taaffe J.; Harris M.; Long A.;

Source: Journal of Clinical Microbiology; Nov 2017; vol. 55 (no. 11); p. 3267-3282

Publication Type(s): Article

Abstract: The TB Portals program is an international consortium of physicians, radiologists, and microbiologists from countries with a heavy burden of drug-resistant tuberculosis working with data scientists and information technology professionals. Together, we have built the TB Portals, a repository of socioeconomic/geographic, clinical, laboratory, radiological, and genomic data from patient cases of drug-resistant tuberculosis backed by shareable, physical samples. Currently, there are 1,299 total cases from five country sites (Azerbaijan, Belarus, Moldova, Georgia, and Romania), 976 (75.1%) of which are multidrug or extensively drug resistant and 38.2%, 51.9%, and 36.3% of which contain X-ray, computed tomography (CT) scan, and genomic data, respectively. The top Mycobacterium tuberculosis lineages represented among collected samples are Beijing, T1, and H3, and single nucleotide polymorphisms (SNPs) that confer resistance to isoniazid, rifampin, ofloxacin, and moxifloxacin occur the most frequently. These data and samples have promoted drug discovery efforts and research into genomics and quantitative image analysis to improve diagnostics while also serving as a valuable resource for researchers and clinical providers. The TB Portals database and associated projects are continually growing, and we invite new partners and collaborations to our initiative. The TB Portals data and their associated analytical and statistical tools are freely available at https://tbportals.niaid.nih.gov/.

Polyclonal pulmonary tuberculosis infections and risk for multidrug resistance, Lima, Peru

Author(s): Nathavitharana R.R.; Shi C.X.; Cohen T.; Chindelevitch L.; Calderon R.; Galea J.T.

Source: Emerging Infectious Diseases; Nov 2017; vol. 23 (no. 11); p. 1887-1890

Publication Type(s): Article

Available at Emerging Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract: Because within-host Mycobacterium tuberculosis diversity complicates diagnosis and treatment of tuberculosis (TB), we measured diversity prevalence and associated factors among 3,098 pulmonary TB patients in Lima, Peru. The 161 patients with polyclonal infection were more likely than the 115 with clonal or the 2,822 with simple infections to have multidrug-resistant TB.

Drug-resistant tuberculosis among children, China, 2006-2015

Author(s): Tao N.-N.; Liu Y.; Li H.-C.; He X.-C.; Zhang X.-X.; Yu C.-B.

Source: Emerging Infectious Diseases; Nov 2017; vol. 23 (no. 11); p. 1800-1805

Publication Type(s): Article

Available at Emerging Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract: Microbial drug resistance has become a major public health concern worldwide. To acquire epidemiologic data on drug-resistant tuberculosis (DR TB) among children, a major cause of illness and death for this population, we conducted a retrospective study of 2006-2015 data from 36 TB prevention and control institutions in Shandong Province, China. A total of 14,223 new TB cases, among which children (

Epidemiology of Pediatric Multidrug-Resistant Tuberculosis in the United States, 1993-2014

Author(s): Smith S.E.; Shah S.; Pratt R.; Trieu L.; Ahuja S.D.; Barry P.M.; Thai D.T.

Source: Clinical Infectious Diseases; Nov 2017; vol. 65 (no. 9); p. 1437-1443

Publication Type(s): Article

Abstract: Background Multidrug-resistant tuberculosis (MDR-TB) is an important global public health threat, but accurate estimates of MDR-TB burden among children are lacking. **[ABSTRACT EDITED]**

Incorporating social justice and stigma in cost-effectiveness analysis: Drug-resistant tuberculosis treatment

Author(s): Zwerling A.; Dowdy D.; Taylor H.; Merritt M.W.; Von Delft A.

Source: International Journal of Tuberculosis and Lung Disease; Nov 2017; vol. 21

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract: Novel therapies for multidrug-resistant tuberculosis (MDR-TB) are likely to be expensive. The cost of novel drugs (e.g., bedaquiline, delamanid) may be so prohibitively high that a traditional cost-effectiveness analysis (CEA) would rate regimens containing these drugs as not cost-effective. Traditional CEA may not appropriately account for considerations of social justice, and may put the most disadvantaged populations at greater risk. Using the example of novel drug regimens for MDR-TB, we propose a novel methodology, 'justice-enhanced CEA', and demonstrate how such an approach can simultaneously assess social justice impacts alongside traditional cost-effectiveness ratios. **[ABSTRACT EDITED]**

Clinical implication of novel drug resistance-conferring mutations in resistant tuberculosis

Author(s): Mnyambwa N.P.; Kim D.-J.; Petrucka P.; Ngadaya E.S.; Mfinanga S.G.; Kazwala R.

Source: European Journal of Clinical Microbiology and Infectious Diseases; Nov 2017; vol. 36 (no. 11); p. 2021-2028

Publication Type(s): Review

Abstract: Evolving novel and/or unfamiliar mutations are revolutionizing the pathways of antibiotic resistance of clinical tuberculosis. The accumulation and interaction of these poorly characterized mutations augment the complexity of resistant pathogenic strains and raise public health concerns. This article reviews our current understanding of the genetic changes that characterize drug resistance in tuberculosis and highlights the imperative for further investigations focusing on the effects of an individual mutation and interacting mutations with detailed strain epidemiology, particularly as these pertain to technology-limited countries with high tuberculosis incidence rates. Concomitantly, there is a need for the development, testing, and uptake of new tools for studying the effects of these mutations in drug resistance and fitness cost of the pathogen. Such genetic data are critical for effective localized and global tuberculosis control interventions and for accurate epidemiological predictions.

Genetic diversity of multidrug-resistant Mycobacterium tuberculosis strains isolated from tuberculosis patients in Iran using MIRU-VNTR technique

Author(s): Khosravi A.D.; Dezfuli S.K.; Hashemzadeh M.; Goodarzi H.; Shahraki A.H.; Mohajeri P.

Source: Kaohsiung Journal of Medical Sciences; Nov 2017; vol. 33 (no. 11); p. 550-557

Publication Type(s): Article

Abstract: Tuberculosis (TB) is considered as one of the most important infectious diseases in the world, and recent rise and spread of multidrug-resistant (MDR) Mycobacterium tuberculosis (MTB) strains, have made the matter worsened. Due to the importance of TB prevalence in Iran, this study was designed to investigate the genetic diversity among MDR strains of MTB by MIRU-VNTR typing scheme. A total of 88 drug resistant M. tuberculosis isolates belong to pulmonary TB cases were collected from several TB reference centers of Iran. Drug susceptibility testing for Isoniazid and Rifampin was performed using the agar proportion method and MDR isolates were underwent

genotyping by using 12-locus- based MIRU-VNTR typing. On performing proportion method, 22 isolates were identified as MDR. By typing of MDR isolates using 12-loci MIRU-VNTR technique, high diversity were demonstrated in MDR strains and these were classified into 20 distinct MIRU-VNTR genotypes. MIRU loci 10 and 26 were the most discriminatory loci with 8 and 7 alleles respectively; while MIRU loci 2, 20, 24 and 39 were found to be the least discriminatory with 1-2 alleles each. We noticed a mixed infection in isolate 53, as this isolate comprised simultaneous two alleles in MIRU loci 40, 10, 16 and 39. In conclusion, this result represents MIRU-VNTR typing as a useful tool for studying genetic diversity of MDR-MTB in regional settings, and will help the health sectors to construct a preventive program for MDR-TB. Additionally, it can detect mixed infection which can facilitate management of treatment.

Determinants of multidrug resistance among previously treated tuberculosis patients in Zimbabwe, 2014

Author(s): Muchena G.; Shambira G.; Juru T.; Gombe N.; Takundwa L.; Bangure D.; Tshimanga M.

Source: International Journal of Tuberculosis and Lung Disease; Nov 2017; vol. 21 (no. 11)

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:SETTING: Zimbabwe. OBJECTIVE: To investigate the determinants of multidrug-resistant tuberculosis (MDR-TB) among previously treated TB patients. DESIGN: A 1:3 case-control study with bivariate analysis and logistic regression. **[ABSTRACT EDITED]**

Innovative approach to the design and evaluation of treatment adherence interventions for drug-resistant TB

Author(s): Alegria-Flores K.; Lich K.L.H.; Paul J.E.; Weiner B.J.; Wiesen C.A.; Van Rie A.; Tovar M.A.

Source: International Journal of Tuberculosis and Lung Disease; Nov 2017; vol. 21 (no. 11)

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:BACKGROUND: Drug-resistant tuberculosis (DR-TB) treatment is expensive, lengthy, and can cause severe side effects. Patients face socio-economic, psychosocial, and systemic barriers to adherence; poor adherence results in poor treatment outcomes. OBJECTIVE: To estimate the effects of the components of the information-motivation-behavioral skills model on DR-TB treatment adherence. **[ABSTRACT EDITED]**

Relation of Mycobacterium tuberculosis mutations at katG315 and inhA-15 with drug resistance profile, genetic background, and clustering in Argentina

Author(s): Monteserin J.; Paul R.; Simboli N.; Lopez B.; Ritacco V.; Latini C.; Yokobori N.

Source: Diagnostic Microbiology and Infectious Disease; Nov 2017; vol. 89 (no. 3); p. 197-201

Publication Type(s): Article

Abstract: We analyzed 362 isoniazid-resistant clinical isolates of Mycobacterium tuberculosis obtained countrywide for the presence of mutation at katG315 and inhA-15 in relation to genotype, pattern of phenotypic resistance to other drugs, and ability to spread. We found the following mutation frequencies: katG315MUT/inhA-15wt 53.0%, katG315wt/inhA-15MUT 27.4%, katG315wt/inhA-15wt 19.3%, and katG315MUT/inhA-15MUT only 0.3%. Mutation at katG315 associated with the LAM superfamily; mutation at inhA-15 associated with the S family and the T1

Tuscany genotype; the combination katG315wt/inhA-15wt associated with the T1 Ghana genotype. Isolates harboring katG315MUT/inhA-15wt tended to accumulate resistance to other drugs and were more frequently found in cluster; isolates harboring katG315wt/inhA-15wt were more frequently found as orphan isolates. Although epidemiological and host factors could also be modulating the events observed, in Argentina, the systematic genotyping of drug resistant clinical isolates could help to predict an enhanced risk of transmission and a propensity to develop resistance to increasing numbers of drugs.

GenoType MTBDRplus assay for screening and characterization of isoniazid and rifampicin resistance-associated mutations in multidrug-resistant Mycobacterium tuberculosis from India

Author(s): Sethi S.; Yadav R.; Singh S.; Khaneja R.; Aggarwal A.; Behera D.; Agarwal P.

Source: Letters in Applied Microbiology; Nov 2017; vol. 65 (no. 5); p. 373-380

Publication Type(s): Article

Abstract: Multidrug resistant tuberculosis (MDR-TB) is rising and the World Health Organization has recommended the line probe assay (LPA) for screening. In this study we assess LPA at a tertiary care centre from North India in 1758 samples from suspected MDR-TB cases. **[ABSTRACT EDITED]**

A Review of Moxifloxacin for the Treatment of Drug-Susceptible Tuberculosis

Author(s): Naidoo A.; Naidoo K.; Padayatchi N.; McIlleron H.; Essack S.

Source: Journal of Clinical Pharmacology; Nov 2017; vol. 57 (no. 11); p. 1369-1386

Publication Type(s): Review

Abstract: Moxifloxacin, an 8-methoxy quinolone, is an important drug in the treatment of multidrug-resistant tuberculosis and is being investigated in novel drug regimens with pretomanid, bedaquiline, and pyrazinamide, or rifapentine, for the treatment of drug-susceptible tuberculosis. Early results of these studies are promising. Although current evidence does not support the use of moxifloxacin in treatment-shortening regimens for drug-susceptible tuberculosis, it may be recommended in patients unable to tolerate standard first-line drug regimens or for isoniazid monoresistance. Evidence suggests that the standard 400-mg dose of moxifloxacin used in the treatment of tuberculosis may be suboptimal in some patients, leading to worse tuberculosis treatment outcomes and emergence of drug resistance. Furthermore, a drug interaction with the rifamycins results in up to 31% reduced plasma concentrations of moxifloxacin when these are combined for treatment of drug-susceptible tuberculosis, although the clinical relevance of this interaction is unclear. Moxifloxacin exhibits extensive interindividual pharmacokinetic variability. Higher doses of moxifloxacin may be needed to achieve drug exposures required for improved clinical outcomes. Further study is, however, needed to determine the safety of proposed higher doses and clinically validated targets for drug exposure to moxifloxacin associated with improved tuberculosis treatment outcomes. We discuss in this review the evidence for the use of moxifloxacin in drug-susceptible tuberculosis and explore the role of moxifloxacin pharmacokinetics, pharmacodynamics, and drug interactions with rifamycins, on tuberculosis treatment outcomes when used in first-line tuberculosis drug regimens.

Mutation analysis for detection of drug resistance in mycobacterium tuberculosis isolates from Khyber Pakhtunkhwa, Pakistan

Author(s): Ahmad B.; Idrees M.; Ahmad K.; Bashir S.; Ahmad S.; Fang H.L.

Source: Journal of the Pakistan Medical Association; Nov 2017; vol. 67 (no. 11); p. 1684-1688

Publication Type(s): Article

Abstract: Objective: To examine the frequency and distribution of mutations in the 'hot spot regions' of drug-resistant genes. **[ABSTRACT EDITED]**

Infection control, genetic assessment of drug resistance and drug susceptibility testing in the current management of multidrug/extensively-resistant tuberculosis (M/XDR-TB) in Europe: A tuberculosis network European Trialsgroup (TBNET) study

Author(s): Albrecht D.; Anibarro L.; Gomez N.A.; Andersen A.B.; Avsar K.; Balasanyants G.; Belton M.

Source: Respiratory Medicine; Nov 2017; vol. 132 ; p. 68-75

Publication Type(s): Article

Abstract: Aim Europe has the highest documented caseload and greatest increase in multidrug and extensively drug-resistant tuberculosis (M/XDR-TB) of all World Health Organization (WHO) regions. This survey examines how recommendations for M/XDR-TB management are being implemented. **[ABSTRACT EDITED]**

Mycobacterium tuberculosis genotypes and predominant clones among the multidrug-resistant isolates in Spain 1998-2005

Author(s): Samper S.; Millan-Lou M.I.; Iglesias M.J.; Gavin P.; Jimenez M.S.; Couvin D.; Rastogi N.

Source: Infection, Genetics and Evolution; Nov 2017; vol. 55 ; p. 117-126

Publication Type(s): Article

Abstract: Although the incidence of tuberculosis (TB) is gradually decreasing in Spain, there is an increase in the proportion of foreign-born cases. This changing scenario is slowly shifting the local TB epidemiology from endemic to imported cases with an increased risk for multidrug-resistant (MDR) and extensively drug resistant (XDR) strains of Mycobacterium tuberculosis complex. MDR/XDR strains from Spain (n = 366 MTBC isolates, 1 strain per patient) isolated between 1998 and 2005 were retained for this retrospective analysis. **[ABSTRACT EDITED]**

Neural network models for supporting drug and multidrug resistant tuberculosis screening diagnosis

Author(s): Evora L.H.R.A.; Seixas J.M.; Kritski A.L.

Publication Type(s): Article

Abstract: Tuberculosis (TB) is the leading cause of global mortality among communicable diseases. The diagnosis of Drug-Resistant Tuberculosis (DR-TB) demands even more attention, leading to longer treatments and higher deceased rates. All diagnostic methods available have deficiencies in their detection rates, time release results, or have a higher cost and need a complex infrastructure to setup. New molecular diagnostics, such as the Xpert MTB/RIF assay, have great potential for revolutionizing the diagnosis of Rifampicin Resistance (RR). But, a positive RR result with this test should be carefully interpreted and take into consideration the risk of Multidrug-Resistant TB (MDR-TB) according to its prevalence, locally. Therefore, the development of screening approaches for DR/MDR-TB suspects would help to identify those should be tested by Xpert MTB/RIF. This work develops Artificial Neural Network (ANN) models considering data from presumed DR/MDR-TB subjects according to the National Guidelines at Rio de Janeiro/Brazil, attended in reference centers in Rio de Janeiro, from Feb 2011 and May 2013. Subjects aged 18 years or older, and results were compared with models based on Classification And Regression Trees (CART). Practical operation at different epidemiological scenarios are considered by constructing models using different variable selection criteria, so that environments with low resource conditions can be assisted. Among 280

presumed DR-TB cases included, 38 were DR-TB, 48-MDR, 32-Drug-Sensitive and 162 with no TB. Between DR-TB and non DR-TB, the sensitivity and specificity reached 95.1%(+/-5.0) and 85.0%(+/-4.9), respectively. The promising results of clinical score for DR/MDR-TB diagnosis indicate that this approach may be used in the evaluation of presumed DR/MDR-TB.

Extensively drug resistant tuberculosis in Mali: a case report.

Author(s): Diarra, Bassirou; Toloba, Yacouba; Konate, Bakary; Sanogo, Moumine

Source: BMC research notes; Nov 2017; vol. 10 (no. 1); p. 561

Publication Type(s): Journal Article

Available at BMC Research Notes - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDDrug resistant tuberculosis presents a major public health challenge.CASE PRESENTATIONWe present here the first two patients diagnosed with extensively drug resistant tuberculosis in Bamako, Mali. Genotypic findings suggest possible nosocomial transmission from the first patient to the second one, resulting in superinfection of the second patient. After being diagnosed with extensively drug resistant tuberculosis in August 2016, the patients only started receiving appropriate treatment 10 months later.CONCLUSIONThe identification of these patients highlights the need for improved diagnostic and treatment algorithms for better surveillance and management of drug resistance in Mali. In the interest of these as well as future patients suffering from resistant tuberculosis, all steps recommended for programmatic management of drug resistant tuberculosis must be urgently prioritized in order to strengthen the multidrug resistant tuberculosis program.

Prevalence and molecular characterization of pyrazinamide resistance among multidrug-resistant Mycobacterium tuberculosis isolates from Southern China.

Author(s): Pang, Yu; Zhu, Damian; Zheng, Huiwen; Shen, Jing; Hu, Yan; Liu, Jie; Zhao, Yanlin

Source: BMC infectious diseases; Nov 2017; vol. 17 (no. 1); p. 711

Publication Type(s): Journal Article

Available at BMC Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDPyrazinamide (PZA) plays a unique role in the treatment for multidrug-resistant tuberculosis (MDR-TB) in both first- and second-line regimens. The aim of this study was to investigate the prevalence and molecular characterization of PZA resistance among MDR-TB isolates collected in Chongqing municipality. **[ABSTRACT EDITED]**

Draft Genome Sequence of the First Confirmed Isolate of Multidrug-Resistant Mycobacterium tuberculosis in Tasmania.

Author(s): Gautam, Sanjay S; Mac Aogáin, Micheál; O'Toole, Ronan F

Source: Genome announcements; Nov 2017; vol. 5 (no. 44)

Publication Type(s): Journal Article

Available at Genome announcements - from Europe PubMed Central - Open Access

Abstract: The spread of multidrug-resistant (MDR) tuberculosis (TB) has become a major global challenge. In 2016, Tasmania recorded its first known incidence of MDR-TB. Here, we report the draft whole-genome sequence of the Mycobacterium tuberculosis isolate from this case, TASMDR1, and describe single-nucleotide polymorphisms associated with its drug resistance.

Correlation between the BACTEC MGIT 960 culture system with Genotype MTBDRplus and TB-SPRINT in multidrug resistant Mycobacterium tuberculosis clinical isolates from Brazil.

Author(s): Dantas, Nayanne Gama Teixeira; Suffys, Phillip Noel; Carvalho, Wânia da Silva;

Source: Memorias do Instituto Oswaldo Cruz; Nov 2017; vol. 112 (no. 11); p. 769-774

Publication Type(s): Journal Article

Available at Memórias do Instituto Oswaldo Cruz - from Europe PubMed Central - Open Access

Abstract:BACKGROUNDThe accurate detection of multidrug-resistant tuberculosis (MDR-TB) is critical for the application of appropriate patient treatment and prevention of transmission of drug-resistant Mycobacterium tuberculosis isolates. The goal of this study was to evaluate the correlation between phenotypic and molecular techniques for drug-resistant tuberculosis diagnostics. Molecular techniques used were the line probe assay genotype MTBDRplus and the recently described tuberculosis-spoligo-rifampin-isoniazid typing (TB-SPRINT) bead-based assay. Conventional drug susceptibility testing (DST) was done on a BACTECTM MGIT 960 TB. **[ABSTRACT EDITED]**

Submillisievert Computed Tomography of the Chest in Contact Investigation for Drug-Resistant Tuberculosis.

Author(s): Lee, Seung Chul; Yoon, Soon Ho; Goo, Jin Mo; Yim, Jae Joon; Kim, Chang Ki

Source: Journal of Korean medical science; Nov 2017; vol. 32 (no. 11); p. 1779-1783

Publication Type(s): Journal Article

Available at Journal of Korean Medical Science - from Europe PubMed Central - Open Access

Abstract: Close contacts with infectious tuberculosis (TB) are persons at high risk for developing active disease. We preliminarily introduced submillisievert chest computed tomography (CT) scan (effective dose, 0.19-0.25 millisievert) in a contact investigation of multi-drug resistant (MDR)-TB. Baseline CT scan showed minimal nodules or branching opacities in two of six contacts. A two-month follow-up examination revealed a radiologic progression in contact 1, subsequently having the microbiologic diagnosis of MDR-TB at an asymptomatic early stage, whereas nodules transiently increased after 3 months in contact 2, followed by a decrease after one year. Contact 1 was cured after 1.5-year of anti-MDR-TB treatment. In conclusion, early identification of secondary MDR-TB is feasible with submillisievert chest CT scans in contact investigations of MDR-TB, minimizing of MDR-TB transmission and offering a favorable treatment outcome. This was a clinical trial study and was registered at www.ClinicalTrials.gov (Identifier: NCT02454738).

Safety and tolerability of two regimens used to treat multidrug resistant tuberculosis in Kinshasa: A prospective cohort

Author(s): Lula Y.; Engo A.; Nsimba G.; Mesia G.; Tona G.; Van Geertruyden J.P.; Mbo J.; Mulongo R

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 188-189

Publication Type(s): Conference Abstract

Available at Tropical Medicine & International Health - from IngentaConnect - Open Access

Abstract: Introduction Democratic Republic of Congo (DRC) accounted among high multi-drug (MDR) Tuberculosis (TB) burden countries (1). Since 2013, the national TB programme has introduced a shorter regimen for treatment of MDR TB (9 months vs. 20 months for the existing one) under operational research conditions. Aim The aim of the present study was to assess the safety and tolerability of shorter regimen (SR) in comparison with the long regimen (LR). **[ABSTRACT EDITED]**

Effectiveness and safety of long-term versus short-term treatment regimen of multidrug-resistant pulmonary tuberculosis in Burkina Faso

Author(s): Ouedraogo A.R.; Badoum G.; Ouedraogo G.; Boncoungou K.; Maiga S.; Nacanabo R.; Kunakey E.K.; Ouedraogo M.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 36

Publication Type(s): Conference Abstract

Available at Tropical Medicine & International Health - from IngentaConnect - Open Access

Abstract: Introduction The emergence of anti-tuberculosis drug resistance is of big concern in several countries and impede the effectiveness of tuberculosis control worldwide. The treatment protocol in Burkina Faso was a 21 months long-term regimen (LR) and it was costly and burdensome, both for patients and health staff. Following the promising results of Van Deun A. et al. in Bangladesh in 2010, Burkina Faso decided, in 2013, to be part of a clinical trial aiming at experimenting the effects of a nine months short-term regimen (SR), under the aegis of the International Union Against Tuberculosis and Lung Disease. Aim Compare the efficacy and tolerance of the LR versus the SC multidrug-resistant tuberculosis (MDR-TB) treatment in Burkina Faso. **[ABSTRACT EDITED]**

Detection and treatment delay among drug-resistant tuberculosis patients in provincial hospital in Bandung, Indonesia

Author(s): Lestari B.W.; Andriyoko B.; Hill P.; Van Crevel R.; Soeroto A.Y.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 364

Publication Type(s): Conference Abstract

Available at Tropical Medicine & International Health - from IngentaConnect - Open Access

Abstract: Introduction Indonesia has a huge tuberculosis (TB) problem, including a majority of drug resistant cases that remain undetected. Roll-out of the rapid drug susceptibility test (DST) using Xpert MTB/RIF (Xpert) may help increase early detection and treatment. Therefore, we aimed to formally investigate possible delays in diagnosis and treatment of rifampicin resistant TB (RR-TB) using Xpert as an initial diagnostic method. **[ABSTRACT EDITED]**

Multidrug resistant tuberculosis in Ethiopian settings and its association with previous history of anti-tuberculosis treatment: A systematic review and meta-analysis

Author(s): Eshetie S.; Gizachew M.; Dagnew M.; Tessema B.; Moges F.; Kumera G.; Woldie H.;

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 213

Publication Type(s): Conference Abstract

Available at Tropical Medicine & International Health - from IngentaConnect - Open Access

Abstract: Introduction Efforts to control the global burden of tuberculosis (TB) have been jeopardized by the rapid evolution of multi-drug resistant Mycobacterium tuberculosis (MTB), which is resistant to at least isoniazid and rifampicin. Previous studies have documented variable prevalences of multidrugresistant tuberculosis (MDR-TB) and its risk factors in Ethiopia. Aim This meta-analysis is aimed, firstly, to determine the pooled prevalence of MDR-TB among newly diagnosed and previously treated TB cases, and secondly, to measure the association between MDR-TB and a history of previous anti-TB drugs treatment. **[ABSTRACT EDITED]**

Spatial distribution of extensively drug-resistant tuberculosis (XDR TB) patients in KwaZulu-Natal, South Africa

Author(s): Kapwata T.; Morris N.; Campbell A.; Nelson K.N.; Allana S.; Gandhi N.R.; Shah N.S.; Mthiyane T.; Mpangase P.; Moodley P.; Mlisana K.; Brust J.C.M.

Source: PLoS ONE; Oct 2017; vol. 12 (no. 10)

Publication Type(s): Article

Available at PLoS ONE - from EBSCO (MEDLINE Complete)

Abstract: Background: KwaZulu-Natal province, South Africa, has among the highest burden of XDR TB worldwide with the majority of cases occurring due to transmission. Poor access to health facilities can be a barrier to timely diagnosis and treatment of TB, which can contribute to ongoing transmission. We sought to determine the geographic distribution of XDR TB patients and proximity to health facilities in KwaZulu-Natal. **[ABSTRACT EDITED]**

Diversity and evolution of drug resistance mechanisms in Mycobacterium tuberculosis

Author(s): Al-Saeedi M.; Al-Hajoj S.

Source: Infection and Drug Resistance; Oct 2017; vol. 10 ; p. 333-342

Publication Type(s): Review

Available at Infection and Drug Resistance - from Europe PubMed Central - Open Access

Abstract: Despite the efficacy of antibiotics to protect humankind against many deadly pathogens, such as Mycobacterium tuberculosis, nothing can prevent the emergence of drug-resistant strains. Several mechanisms facilitate drug resistance in M. tuberculosis including compensatory evolution, epistasis, clonal interference, cell wall integrity, efflux pumps, and target mimicry. In this study, we present recent findings relevant to these mechanisms, which can enable the discovery of new drug targets and subsequent development of novel drugs for treatment of drug-resistant M. tuberculosis.Copyright © 2017 Al-Saeedi and Al-Hajoj.

Primary multi drug resistant extrapulmonary tuberculosis presenting as empyema necessitans in an immuno-competent young girl

Author(s): Bajpai J.; Kant S.; Verma A.K.

Source: Journal of Clinical and Diagnostic Research; Oct 2017; vol. 11 (no. 10)

Publication Type(s): Article

Available at JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH - from Europe PubMed Central - Open Access

Abstract: Empyema Necessitans (EN) is a variant of empyema that extends to extrapleural space and can affect chest wall too. Although, tuberculosis is the most common cause of EN, primary multidrug resistant TB presenting as EN is rare. Despite the ominous upward trend of drug resistant pulmonary tuberculosis prevalence globally, only sparse reports of extrapulmonary involvement by drug resistant mycobacteria have been documented in literature. Uptill now, culture has been the gold standard for diagnosis of TB. However, the availability of simple and rapid molecular tests has made the diagnosis of extrapulmonary forms of TB possible with high sensitivity and specificity. Here, we report a case of primary Multi Drug Resistant (MDR) extrapulmonary tuberculosis presenting as EN in an immuno-competent young girl.Copyright © 2017, Journal of Clinical and Diagnostic Research. All rights reserved.

A katG 315 mutation alone should not lead to exclusion of isoniazid in treatment of multidrug-resistant tuberculosis

Author(s): Heldal E.

Source: European Respiratory Journal; Oct 2017; vol. 50 (no. 4)

Publication Type(s): Letter

High-dose isoniazid in the shorter-course multidrug-resistant tuberculosis regimen in the Republic of Moldova

Author(s): Chesov D.; Ciobanu N.; Crudu V.; Lange C.; Heyckendorf J.

Source: European Respiratory Journal; Oct 2017; vol. 50 (no. 4)

Publication Type(s): Letter

6-Cyano Analogues of Bedaquiline as Less Lipophilic and Potentially Safer Diarylquinolines for Tuberculosis

Author(s): Tong A.S.T.; Choi P.J.; Blaser A.; Sutherland H.S.; Tsang S.K.Y.; Denny W.A.; Palmer B.D.

Source: ACS Medicinal Chemistry Letters; Oct 2017; vol. 8 (no. 10); p. 1019-1024

Publication Type(s): Article

Abstract: Bedaquiline (1) is a new drug for tuberculosis and the first of the diarylquinoline class. It demonstrates excellent efficacy against TB but induces phospholipidosis at high doses, has a long terminal elimination half-life (due to its high lipophilicity), and exhibits potent hERG channel inhibition, resulting in clinical QTc interval prolongation. A number of structural ring A analogues of bedaquiline have been prepared and evaluated for their anti-M.tb activity (MIC90), with a view to their possible application as less lipophilic second generation compounds. It was previously observed that a range of 6-substituted analogues of 1 demonstrated a positive correlation between potency (MIC90) toward M.tb and drug lipophilicity. Contrary to this trend, we discovered, by virtue of a clogP/M.tb score, that a 6-cyano (CN) substituent provides a substantial reduction in lipophilicity with only modest effects on MIC values, suggesting this substituent as a useful tool in the search for effective and safer analogues of 1.

Current therapies for the treatment of multidrug-resistant tuberculosis in children in India

Author(s): Mukherjee A.; Lodha R.; Kabra S.K.

Source: Expert Opinion on Pharmacotherapy; Oct 2017; vol. 18 (no. 15); p. 1595-1606

Publication Type(s): Review

Abstract: Introduction: Multidrug-resistant tuberculosis (MDR-TB) is a serious life threatening condition affecting children as well as adults worldwide. Timely diagnosis and effective treatment, both of which are complex in children, are the prerogatives for a favorable outcome. Areas covered: This review covers epidemiology, treatment regimen and duration, newer drugs and adverse events in children with MDR-TB. Special note has been made of epidemiology and principles of treatment followed in Indian children. Expert opinion: High index of suspicion is essential for diagnosing childhood MDR-TB. If there is high probability, a child can be diagnosed as presumptive MDR-TB and started on empiric treatment in consultation with experts. However, every effort should be made to confirm the diagnosis. Backbone of an effective MDR-TB regimen consists of four 2nd line anti-TB drugs plus pyrazinamide; duration being 18-24 months. The newer drugs delamanid and bedaquiline can be used in younger children if no other alternatives are available after consultation with experts. Wider availability of these drugs should be ensured for benefit to all concerned. More research is required for development of new and repurposed drugs to combat MDR-TB. Children need to be included in clinical trials for such life-saving drugs, so that nobody is denied the benefits.

Database: EMBASE

Pulmonary resection for patients with multidrug-resistant tuberculosis based on survival outcomes: A systematic review and meta-analysis

Author(s): Roh H.F.; Kim J.M.; Kim J.; HyukNam S.

Source: European Journal of Cardio-thoracic Surgery; Oct 2017; vol. 52 (no. 4); p. 673-678

Publication Type(s): Review

Abstract: We investigated the survival benefit of pulmonary resection for patients with multidrug-resistant tuberculosis. To weigh the survival benefit of pulmonary resection for patients with multidrug-resistant tuberculosis who have undergone surgical treatment combined with medical chemotherapy compared with medical chemotherapy alone, we did a meta-analysis of available studies containing a hazard ratio for pulmonary resection. **[ABSTRACT EDITED]**

Abnormalities in liver or kidney function tests among patients treated for multi-drug resistant Tuberculosis in Kinshasa

Author(s): Lula Y.; Engo A.; Nsimba G.; Mesia G.; Tona G.; Kaswa M.; Mbo J.; Mulongo R.

Source: Drug Safety; Oct 2017; vol. 40 (no. 10); p. 1020

Publication Type(s): Conference Abstract

Abstract: Background: Multi-drug resistant Tuberculosis (MDR TB) treatment is known to be associated with significative adverse events (AEs). Liver, renal or electrolytes disturbances such as hypokalemia are accounted among the most serious AEs which may lead to death or treatment interruption or modification. (1-3) In the Democratic Republic of Congo (DRC), National TB programme recommends two regimens. The shorter regimen (SR) lasts 9 months and the second one is the 20-months course treatment. Objective: The aim of this study was to describe and assess liver, renal enzymes or hypokalemia in MDR TB patients under treatment. **[ABSTRACT EDITED]**

To Test or Not to Test? Ending the Age-Old Debate for Drug-Resistant Tuberculosis

Author(s): Furin J.; Cox H.

Source: Clinical Infectious Diseases; Oct 2017; vol. 65 (no. 7); p. 1212-1213

Publication Type(s): Note

Of Testing and Treatment: Implications of Implementing New Regimens for Multidrug-Resistant Tuberculosis

Author(s): Dowdy D.W.; Theron G.; Warren R.; Tornheim J.A.; Kendall E.A.

Source: Clinical Infectious Diseases; Oct 2017; vol. 65 (no. 7); p. 1206-1211

Publication Type(s): Article

Abstract:A novel, shorter-course regimen for treating multidrug-resistant (MDR) tuberculosis was recently recommended by the World Health Organization. However, the most appropriate use of drug susceptibility testing (DST) to support this regimen is less clear. Implementing countries must therefore often choose between using a standardized regimen despite high levels of underlying drug resistance or require more stringent DST prior to treatment initiation. The former carries a high likelihood of exposing patients to de facto monotherapy with a critical drug class (fluoroquinolones), whereas the latter could exclude large groups of patients from their most effective treatment option. We discuss the implications of this dilemma and argue for an approach that will integrate DST into the delivery of any novel antimicrobial regimen, without excessively stringent requirements. Such guidance could make the novel MDR tuberculosis regimen available to most

patients while reducing the risk of generating additional drug resistance.

Multidrug-resistant tuberculosis in Brazil: A snapshot from the National Reference Laboratory for Tuberculosis and other Mycobacterioses

Author(s): Redner P.; Alves Da Silva D.; Fandinho Montes F.C.O.; Antunes L.C.M.

Source: Reviews in Medical Microbiology; Oct 2017; vol. 28 (no. 4); p. 164-166

Publication Type(s): Review

Abstract: Tuberculosis (TB) is a major public health concern worldwide. In 2015, there were approximately 10.4 million new cases of the disease, with 1.4 million deaths. Another major issue regarding TB is the worldwide emergence of drug-resistant strains. The National Reference Laboratory for Tuberculosis and other Mycobacterioses assists the entire network of the Tuberculosis Control Program in Brazil by performing complex diagnostic procedures for the entire country. Here we report the drug susceptibility testing activities of the laboratory between 2013 and 2015. Our numbers highlight the importance of vigilant control programmes to quickly detect, treat and eliminate drug-resistant TB cases, so as to avoid dissemination of drug-resistant forms of this important disease.

Feasibility of a new model for early detection of patients with multidrug-resistant tuberculosis in a developed setting of eastern China

Author(s): Liu Z.; Pan A.; Wu B.; Zhou L.; He H.; Meng Q.; Chen S.; Wang X.; Pang Y.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 (no. 10); p. 1328-1333

Publication Type(s): Article

Abstract: Objectives: The poor detection rate of multidrug-resistant tuberculosis (MDR-TB) highlights the urgent need to explore new case finding model to improve the detection of MDR-TB in China. The aim of this study was to evaluate the feasibility of a new model that combines molecular diagnostics and sputum transportation for early detection of patients with MDR-TB in Zhejiang. Methods: From May 2014 to January 2015, TB suspects were continuously enrolled at six county-level designated TB hospitals in Zhejiang. Each patient gave three sputum samples, which were submitted to laboratory for smear microscopy, solid culture and GeneXpert. The specimens from rifampin (RIF)-resistant cases detected by GeneXpert, and positive cultures were transported from county-level to prefecture-level laboratories for line probe analysis (LPA) and drug susceptibility testing (DST). The performance and interval of MDR-TB detection of the new model were compared with those of conventional model. Results: A total of 3151 sputum specimens were collected from TB suspects. The sensitivity of GeneXpert for detecting culture-positive cases was 92.7% (405/437), and its specificity was 91.3% (2428/2659). Of 16 RIF-resistant cases detected by DST, GeneXpert could correctly identify 15 cases, yielding a sensitivity of 93.8% (15/16). The specificity of GeneXpert for detecting RIF susceptibility was 100.0% (383/383). The average interval to diagnosis of the conventional DST model was 56.5 days, ranging from 43 to 71 days, which was significantly longer than that of GeneXpert plus LPA (22.2 days, P

Incremental Cost Effectiveness of Bedaquiline for the Treatment of Rifampicin-Resistant Tuberculosis in South Africa: Model-Based Analysis

Author(s): Schnippel K.; Sinanovic E.; Firnhaber C.; Conradie F.; Ndjeka N.

Source: Applied Health Economics and Health Policy; Oct 2017 ; p. 1-12

Publication Type(s): Article In Press

Abstract: Background: Nearly 20,000 people were diagnosed with multi-drug and rifampicin-resistant tuberculosis (MDR/RR-TB) in South Africa in 2015, yet only one-half of the patients who start treatment are expected to have a successful outcome. There is increasing evidence of the effectiveness and safety of new drug regimens containing bedaquiline for MDR/RR-TB; however, whether they are affordable for high-burden, limited-resource settings is uncertain. Objective: Our objective was to determine the incremental cost effectiveness of a bedaquiline-based regimen for MDR/RR-TB treatment in South Africa compared with the standard kanamycin-based regimen. **[ABSTRACT EDITED]**

Bedaquiline or delamanid for rifampin-resistant tuberculosis?

Author(s): Lessem E.; Cox V.; Furin J.

Source: The Lancet Respiratory Medicine; Oct 2017; vol. 5 (no. 10); p. 772-774

Publication Type(s): Note

WHO treatment guidelines for drug-resistant tuberculosis, 2016 update: Applicability in South Korea

Author(s): Jeon D.

Source: Tuberculosis and Respiratory Diseases; Oct 2017; vol. 80 (no. 4); p. 336-343

Publication Type(s): Review

Available at Tuberculosis and respiratory diseases - from Europe PubMed Central - Open Access

Abstract: Despite progress made in tuberculosis control worldwide, the disease burden and treatment outcome of multidrug-resistant tuberculosis (MDR-TB) patients have remained virtually unchanged. In 2016, the World Health Organization released new guidelines for the management of MDR-TB. The guidelines are intended to improve detection rate and treatment outcome for MDR-TB through novel, rapid molecular testing and shorter treatment regimens. Key changes include the introduction of a new, shorter MDR-TB treatment regimen, a new classification of medicines and updated recommendations for the conventional MDR-TB regimen. This paper will review these key changes and discuss the potential issues with regard to the implementation of these guidelines in South Korea.

Diagnostico rapido de la tuberculosis. Deteccion de mecanismos de resistenciaRapid diagnosis of tuberculosis. Detection of drug resistance mechanisms

Author(s): Vinuelas-Bayon J.; Vitoria M.A.; Samper S.

Source: Enfermedades Infecciosas y Microbiologia Clinica; Oct 2017; vol. 35 (no. 8); p. 520-528

Publication Type(s): Article

Abstract: Tuberculosis is still a serious public health problem, with 10.8 million new cases and 1.8 million deaths worldwide in 2015. The diversity among members of the Mycobacterium tuberculosis complex, the causal agent of tuberculosis, is conducive to the design of different methods for rapid diagnosis. Mutations in the genes involved in resistance mechanisms enable the bacteria to elude the treatment. We have reviewed the methods for the rapid diagnosis of M. tuberculosis complex and the detection of susceptibility to drugs, both of which are necessary to prevent the onset of new resistance and to establish early, appropriate treatment.

Six-month response to delamanid treatment in MDR TB patients

Author(s): Hewison C.; Varaine F.; Ferlazzo G.; Mohr E.; Avaliani Z.; Hayrapetyan A.; Jonckheere S.

Source: Emerging Infectious Diseases; Oct 2017; vol. 23 (no. 10); p. 1746-1748

Publication Type(s): Letter

Available at Emerging Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract: Delamanid, recently available for the treatment of multidrug-resistant tuberculosis (MDR TB), has had limited use outside clinical trials. We present the early treatment results for 53 patients from 7 countries who received a delamanid-containing treatment for MDR TB. Results show good toler-ability and treatment response at 6 months.

Bedaquiline and linezolid for extensively drug-resistant tuberculosis in pregnant woman

Author(s): Jaspard M.; Melonio I.; Veziris N.; Caumes E.; Elefant-Amoura E.; De Montgolfier I.

Source: Emerging Infectious Diseases; Oct 2017; vol. 23 (no. 10); p. 1731-1732

Publication Type(s): Letter

Available at Emerging Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract:A woman with extremely drug-resistant tuberculosis treated with a drug regimen including linezolid and bedaquiline during her last 3 weeks of pregnancy gave birth to a child without abnormalities. No fetal toxicities were noted by 2 years after delivery. This drug combination might be safe during the late third trimester of pregnancy.

Bedaquiline and delamanid combination treatment of 5 patients with pulmonary extensively drug-resistant tuberculosis

Author(s): Maryandyshev A.; Pontali E.; Tiberi S.; Akkerman O.; Alffenaar J.-W.; Ganatra S.; Amale R

Source: Emerging Infectious Diseases; Oct 2017; vol. 23 (no. 10); p. 1718-1721

Publication Type(s): Article

Available at Emerging Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract: We report the experiences of 5 patients taking bedaquiline with delamanid in combination: 1 patient was cured; 3 culture converted, with 2 continuing and 1 changing therapy; and 1 died from respiratory insufficiency. For 2 patients, QT-interval prolongation but no arrhythmias occurred. Use of this therapy is justified for patients with limited options.

Off-label use of bedaquiline in children and adolescents with multidrug-resistant tuberculosis

Author(s): Achar J.; Herboczek K.; Seddon J.A.; du Cros P.; Hewison C.; Cavalheiro A.P.; Skrahina A.; Cajazeiro J.; Nargiza P.; Rajabov A.S.; Hughes J.; Ferlazzo G.

Source: Emerging Infectious Diseases; Oct 2017; vol. 23 (no. 10); p. 1711-1713

Publication Type(s): Article

Available at Emerging Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract: We describe 27 children and adolescents

Lophomonas blattarum co-infection in a patient with multidrug-resistant tuberculosis

Author(s): Thakur C.; Kumar V.; Verma S.; Sharma V.; Negi R.S.; Gupta S.

Source: International Journal of Tuberculosis and Lung Disease; Oct 2017; vol. 21 (no. 10); p. 1185-1187

Publication Type(s): Letter

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Drug resistance patterns among extra-pulmonary tuberculosis cases in a tertiary care centre in North India

Author(s): Sharma S.K.; Chaubey J.; Singh B.K.; Sharma R.; Mittal A.; Sharma A.

Source: International Journal of Tuberculosis and Lung Disease; Oct 2017; vol. 21 (no. 10); p. 1112-1117

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:BACKGROUND: Extra-pulmonary tuberculosis (EPTB) is a growing public health concern, and data on drug resistance are limited. **[ABSTRACT EDITED]**

Persistently high early mortality despite rapid diagnostics for drug-resistant tuberculosis cases in South Africa

Author(s): Schnippel K.; Sinanovic E.; Firnhaber C.; Conradie F.; Ndjeka N.; Page-Shipp L.; Berhanu R.

Source: International Journal of Tuberculosis and Lung Disease; Oct 2017; vol. 21 (no. 10); p. 1106-1111

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:OBJECTIVE: To describe the timing and predictors of mortality among multidrug- and rifampicin-resistant tuberculosis (MDR/RR-TB) patients reported in the South African electronic drug-resistant TB register (EDRweb), 2012-2014. **[ABSTRACT EDITED]**

Direct detection of Mycobacterium tuberculosis and drug resistance in respiratory specimen using Abbott Realtime MTB detection and RIF/INH resistance assay

Author(s): Tam K.K.-G.; Leung K.S.-S.; To S.W.-C.; Wong S.S.-Y.; Ho P.-L.; Yam W.-C.; Siu G.K.-H.

Source: Diagnostic Microbiology and Infectious Disease; Oct 2017; vol. 89 (no. 2); p. 118-124

Publication Type(s): Article

Abstract: Abbott RealTime MTB (Abbott-RT) in conjunction with Abbott RealTime MTB RIF/INH Resistance (Abbott-RIF/INH) is a new, high-throughput automated nucleic acid amplification platform (Abbott-MDR) for detection of Mycobacterium tuberculosis complex (MTBC) and the genotypic markers for rifampicin (RIF) and isoniazid (INH) resistance directly from respiratory specimens. This prospective study evaluated the diagnostic performance of this new platform for MTBC and multidrug-resistant tuberculosis (MDR-TB) using 610 sputum specimens in a tuberculosis high-burden setting. **[ABSTRACT EDITED]**

High diversity of multidrug-resistant Mycobacterium tuberculosis Central Asian Strain isolates in Nepal

Author(s): Shah Y.; Maharjan B.; Thapa J.; Solo E.S.; Isoda N.; Suzuki Y.; Nakajima C.; Poudel A.;

Source: International Journal of Infectious Diseases; Oct 2017; vol. 63 ; p. 13-20

Publication Type(s): Article

Abstract: Objectives Tuberculosis (TB) caused by Mycobacterium tuberculosis (MTB) poses a major public health problem in Nepal. Although it has been reported as one of the dominant genotypes of MTB in Nepal, little information on the Central Asian Strain (CAS) family is available, especially isolates related to multidrug resistance (MDR) cases. This study aimed to elucidate the genetic and epidemiological characteristics of MDR CAS isolates in Nepal. **[ABSTRACT EDITED]**

Comparative genomic analysis of Mycobacterium tuberculosis Beijing-like strains revealed specific genetic variations associated with virulence and drug resistance

Author(s): Rodriguez-Castillo J.G.; Parra-Lopez C.A.; Murcia-Aranguren M.I.; Pino C.; Nino L.F.

Source: Infection, Genetics and Evolution; Oct 2017; vol. 54 ; p. 314-323

Publication Type(s): Article

Abstract: Isolates of the Mycobacterium tuberculosis lineage 2/East-Asian are considered one of the most successful strains due to their increased pathogenicity, hyper-virulence associated with drug resistance, and high transmission. Recent studies in Colombia have shown that the Beijing-like genotype is associated with multidrug-resistance and high prevalence in the southwest of the country, but the genetic basis of its success in dissemination is unknown. In contribution to this matter, we obtained the whole sequences of six genomes of clinical isolates assigned to the Beijing-like genotype. The genomes were compared with the reference genome of M. tuberculosis H37Rv and 53 previously published M. tuberculosis genomes. We found that the six Beijing-like isolates belong to a modern Beijing sub-lineage and share specific genomic variants: i.e. deletion in the PPE8 gene, in Rv3806c (ubiA) responsible of high ethambutol resistance and in Rv3862c (whiB6) which is involved in granuloma formation and virulence, are some of them. Moreover, each isolated has exclusively single nucleotide polymorphisms (SNPs) in genes related with cell wall processes and cell metabolism. We identified polymorphisms in genes related to drug resistance that could explain the drug-resistant phenotypes found in the six isolates from Colombia. We hypothesize that changes due to these genetic variations contribute to the success of these strains. Finally, we analyzed the IS6110 insertion sequences finding very low variance between them, suggesting that SNPs is the major cause of variability found in Beijing-like strains circulating in Colombia.

Molecular detection of drug resistance to ofloxacin and kanamycin in Mycobacterium tuberculosis by using multiplex allele-specific PCR

Author(s): Kumari R.; Banerjee T.; Anupurba S.

Source: Journal of Infection and Public Health; Oct 2017

Publication Type(s): Article In Press

Abstract: Drug resistance in tuberculosis (TB) is the biggest global health challenge as it hinders the tuberculosis control program and makes the disease more worsen. Molecular methods interrupt the spread of drug resistance by facilitating the appropriate anti- tuberculosis therapy at correct time through rapid diagnosis of multi drug resistant (MDR) and extensively drug resistant tuberculosis (XDR-TB). In this study we standardized and evaluated the diagnostic utility of multiplex allele

specific PCR (MAS-PCR) targeting gyrA D94G and rrs A1401G mutations for detection of resistance against two key drugs (ofloxacin and kanamycin) of second line anti tuberculosis treatment. MAS-PCR assays targeting gyrA D94G and rrs A1401G for ofloxacin (OFL) and kanamycin (KAN) resistance respectively were carried out on 150 multidrug resistant isolates of Mycobacterium tuberculosis. The results were compared with phenotypic drug susceptibility test against ofloxacin and kanamycin by using proportion method on MGIT 960. Of 150 MDR isolates 50 were resistant to both ofloxacin and kanamycin, 36 were resistant to ofloxacin only, 8 were resistant to kanamycin only and 56 were susceptible to both the drugs. MAS-PCR correctly identified gyrA D94G and rrs A1401G mutations in phenotypically resistant isolates with a specificity of 100%. The sensitivity of MAS-PCR was 88.66%, 93.55% and 86% for OFL, KAN and XDR-TB respectively. There was no mutation detected at gyrA D94G region of 12.86% (11 of 86) OFL resistant isolates while 6.89% (4 of 58) of KAN resistant isolates did not carry rrs A1401G substitution. MAS-PCR proves to be a rapid tool for detection of drug resistance which could also be used as an initial marker for screening of XDR-TB.

Interim outcomes of delamanid for the treatment of MDR- and XDR-TB in South Korea.

Author(s): Mok, Jeongha; Kang, Hyungseok; Hwang, Soo Hee; Park, Jin Su;

Source: The Journal of antimicrobial chemotherapy; Oct 2017

Publication Type(s): Journal Article

Abstract: ObjectivesDelamanid is a new anti-TB drug, but few data exist on its use outside clinical trials. The purpose of this study was to evaluate the efficacy as well as the safety and tolerability of a delamanid-containing regimen for 24 weeks in the treatment of MDR- and XDR-TB. **[ABSTRACT EDITED]**

Wild-type catalase peroxidase vs G279D mutant type: Molecular basis of Isoniazid drug resistance in Mycobacterium tuberculosis.

Author(s): Singh, Aishwarya; Singh, Aditi; Grover, Sonam; Pandey, Bharati; Kumari, Anchala;

Source: Gene; Oct 2017

Publication Type(s): Journal Article

Abstract: Mycobacterium tuberculosis katG gene is responsible for production of an enzyme catalase peroxidase that peroxidises and activates the prodrug Isoniazid (INH), a first-line antitubercular agent. INH interacts with catalase peroxidase enzyme within its heme pocket and gets converted to an active form. Mutations occurring in katG gene are often linked to reduced conversion rates for INH. This study is focussed on one such mutation occurring at residue 279, where glycine often mutates to aspartic acid (G279D). In the present study, several structural analyses were performed to study the effect of this mutation on functionality of KatG protein. On comparison, mutant protein exhibited a lower docking score, smaller binding cavity and reduced affinity towards INH. Molecular dynamics analysis revealed the mutant to be more rigid and less compact than the native protein. Essential dynamics analysis determined correlated motions of residues within the protein structure. G279D mutant was found to have many residues that showed related motions and an undesirable effect on the functionality of protein.

Rifampicin Resistance and Multidrug-Resistant Tuberculosis Detection Using Xpert MTB/RIF in Wuhan, China: A Retrospective Study.

Author(s): Huang, Hai; Zhang, Yanlin; Li, Sheng; Wang, Jun; Chen, Jun; Pan, Zhiyun; Gan, Hui

Source: Microbial drug resistance (Larchmont, N.Y.); Oct 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDThe Xpert MTB/RIF test (Cepheid, Sunnyvale, CA) can simultaneously detect the Mycobacterium tuberculosis (MTB) complex DNA and rifampicin (RFP) resistance and can rapidly determine RFP resistance and predict multidrug-resistant tuberculosis (MDR-TB). In this study, we analyzed clinical examination results of a hospital specializing in TB treatment in Wuhan, Hubei, China, and examined the use of traditional culture and drug-sensitive test (DST) results as a gold standard to assess the diagnosis value of the Xpert MTB/RIF test in RFP resistance and MDR-TB. **[ABSTRACT EDITED]**

MTBDRplus for the rapid diagnosis of ocular tuberculosis and screening of drug resistance.

Author(s): Sharma, K; Gupta, A; Sharma, M; Sharma, A; Singh, R; Aggarwal, K; Bansal, R; Thakur, A

Source: Eye (London, England); Oct 2017

Publication Type(s): Journal Article

Abstract: PurposeTimely diagnosis of intraocular tuberculosis (IOTB) along with detection of drug resistance can save many eyes from visual impairment. With the growing incidence of IOTB and rising drug resistance, a reliable diagnostic platform for simultaneous detection of the agent and mutated gene is urgently needed. The MTBDRplus assay was evaluated directly on vitreous fluid samples for the same.Patients and methodsIn a prospective study, The MTBDRplus assay was performed on 127 vitreous fluid samples (77 'study group' comprising cases of presumed ocular tuberculosis and 50 'control group' cases of disease controls (n=25) and non-uveitic controls (n=25)). All samples positive by MTBDRplus assay were subjected to gene sequencing to confirm the mutations for rifampicin and isoniazid resistance.ResultsThe MTBDRplus assay produced a sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of 36.36%, 100%, 100%, and 50.50%, respectively, for the detection of IOTB. Among the 28 cases from study group that were positive by MTBDRplus assay, rifampicin resistance was reported in six and isoniazid resistance in two cases. On sequencing of rpoB and katG gene, one case of false rifampicin-resistant by MTBDRplus was found. The other resistant isolates showed concordant mutations between MTBDRplus assay and sequencing.ConclusionThe MTBDRplus assay is an effective tool for the rapid diagnosis of IOTB along with detection of drug resistance, thereby improving the outcome in IOTB.Eye advance online publication, 20 October 2017; doi:10.1038/eye.2017.214.

Prevalence of drug-resistant pulmonary tuberculosis in India: systematic review and meta-analysis.

Author(s): Goyal, Vishal; Kadam, Vijay; Narang, Prashant; Singh, Vikram

Source: BMC public health; Oct 2017; vol. 17 (no. 1); p. 817

Publication Type(s): Journal Article

Available at BMC Public Health - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDDrug-resistant pulmonary tuberculosis (DR-TB) is a significant public health issue that considerably deters the ongoing TB control efforts in India. The purpose of this review was to investigate the prevalence of DR-TB and understand the regional variation in resistance pattern across India from 1995 to 2015, based on a large body of published epidemiological studies. **[ABSTRACT EDITED]**

Biological evaluation of novel curcumin-pyrazole-mannich derivative active against drug-resistant Mycobacterium tuberculosis.

Author(s): Singh, Alok Kumar; Yadav, Pragya; Karaulia, Pratiksha; Singh, Vinay Kumar; Gupta, Pushpa;

Source: Future microbiology; Oct 2017

Publication Type(s): Journal Article

Abstract:AIMOur objective was to identify a more potent curcumin derivative with specific activity against Mycobacterium tuberculosis. **[ABSTRACT EDITED]**

Verapamil increases the bioavailability and efficacy of bedaquiline but not clofazimine in a murine model of tuberculosis.

Author(s): Xu, Jian; Tasneen, Rokeya; Peloquin, Charles A; Almeida, Deepak V; Li, Si-Yang

Source: Antimicrobial agents and chemotherapy; Oct 2017

Publication Type(s): Journal Article

Abstract: Drug efflux pumps play an important role in intrinsic and acquired drug resistance. Verapamil, an efflux inhibitor that enhances the activity of bedaquiline, clofazimine and other drugs against Mycobacterium tuberculosis has been proposed as a potential adjunctive agent for treatment of tuberculosis (TB). However, the extent to which verapamil enhances in vivo efficacy by inhibiting bacterial efflux pumps versus inhibiting mammalian drug transporters to improve oral bioavailability has not been delineated. We found that verapamil potentiated the in vitro activity of bedaquiline and clofazimine against M. tuberculosis clinical isolates, including those harboring rv0678 mutations. Verapamil increased the efficacy of bedaquiline in a murine TB model by the same extent to which it increased systemic bedaquiline exposure. However, verapamil showed no effect on oral bioavailability or efficacy of clofazimine in mice. Addition of verapamil increased the sterilizing activity of a regimen comprised of bedaquiline, clofazimine and pyrazinamide. These results confirm that verapamil has adjunctive activity in vivo, but also demonstrate that its adjunctive effect is likely due to enhanced systemic exposure to companion drugs via effects on mammalian transporters rather than inhibition of bacterial pumps. Therefore, there may be no advantage to administering verapamil compared to increasing doses of companion drugs.

Fluoroquinolone Resistance Mutation Detection Is Equivalent to Culture-Based Drug Sensitivity Testing for Predicting Multidrug-Resistant Tuberculosis Treatment Outcome: A Retrospective Cohort Study.

Author(s): Farhat, Maha R; Jacobson, Karen R; Franke, Molly F; Kaur, Devinder; Murray, Megan;

Source: Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Oct 2017; vol. 65 (no. 8); p. 1364-1370

Publication Type(s): Journal Article

Abstract: BackgroundMolecular diagnostics that rapidly and accurately predict fluoroquinolone (FQ) resistance promise to improve treatment outcomes for individuals with multidrug-resistant (MDR) tuberculosis (TB). Mutations in the gyr genes, though, can cause variable levels of in vitro FQ resistance, and some in vitro resistance remains unexplained by gyr mutations alone, but the implications of these discrepancies for treatment outcome are unknown. **[ABSTRACT EDITED]**

Drug resistant Mycobacterium tuberculosis; Epidemiology and role of morphological alterations.

Author(s): Velayati, Ali Akbar; Farnia, Parissa; Hoffner, Sven

Source: Journal of global antimicrobial resistance; Oct 2017

Publication Type(s): Journal Article Review

Abstract: In this brief review, various forms of drug resistant tuberculosis (DR-TB) are discussed. The focus of the study is to highlight morphological alterations of DR-TB bacilli at cellular level.

Bilateral cavitary multidrug- or extensively drug-resistant tuberculosis: role of surgery.

Author(s): Marfina, Galina Yu; Vladimirov, Kirill B; Avetisian, Armen O; Starshinova, Anna A

Source: European journal of cardio-thoracic surgery : official journal of the European Association for Cardio-thoracic Surgery; Oct 2017

Publication Type(s): Journal Article

Abstract:OBJECTIVESCavitary disease and bilateral lesions are among the risk factors for poor outcome of pulmonary tuberculosis (TB). Our aim was to explore the value and limits of surgery in patients with advanced TB. **[ABSTRACT EDITED]**

TB-PCR and drug resistance pattern in BALF in smear-negative active pulmonary TB.

Author(s): Chavalertsakul, K; Boonsarngsuk, V; Saengsri, S; Santanirand, P

Source: The international journal of tuberculosis and lung disease : the official journal of the International Union against Tuberculosis and Lung Disease; Oct 2017

Publication Type(s): Journal Article

PubMedID: 28992819

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:SETTING:A tertiary referral hospital in Bangkok, Thailand.OBJECTIVES:To evaluate the efficacy of a bronchoalveolar lavage fluid (BALF) tuberculosis (TB) polymerase chain reaction (PCR) assay for the diagnosis of sputum smear-negative pulmonary TB (PTB) and the usefulness of a drug-resistant (DR) TB-PCR assay compared with standard drug susceptibility testing (DST). **[ABSTRACT EDITED]**

Whole transcriptome and genomic analysis of extensively drug-resistant Mycobacterium tuberculosis clinical isolates identifies downregulation of ethA as a mechanism of ethionamide resistance.

Author(s): de Welzen, Lynne; Eldholm, Vegard; Maharaj, Kashmeel; Manson, Abigail L;

Source: Antimicrobial agents and chemotherapy; Oct 2017

Publication Type(s): Journal Article

Abstract: Genetic based drug susceptibility testing has improved the diagnosis of drug-resistant tuberculosis, but is limited by our lack of knowledge of all resistance mechanisms. Next generation sequencing has assisted in identifying the principal genetic mechanisms of resistance for many drugs, but a significant proportion of phenotypic drug resistance is unexplained genetically. Few studies have formally compared the transcriptome of susceptible and resistant M. tuberculosis We carried out comparative whole genome transcriptomics on extensively drug-resistant (XDR) clinical isolates using RNA-sequencing (RNAseq) to find novel transcriptional mediated mechanisms of resistance. **[ABSTRACT EDITED]**

Pre-Multidrug-Resistant Mycobacterium tuberculosis Infection Causing Fatal Enteric Disease in a Dog from a Family with History of Human Tuberculosis.

Author(s): Ribeiro, M G; Lima, M C F; Franco, M M J; Megid, J; Soares, L M; Machado, L H A;

Source: Transboundary and emerging diseases; Oct 2017; vol. 64 (no. 5); p. e4

Publication Type(s): Journal Article

Abstract: This report describes a fatal case of a pet dog with major enteric signs owned by a family that has experienced cases of pulmonary tuberculosis (TB) in the household. **[ABSTRACT EDITED]**

Rapid diagnosis of tuberculosis. Detection of drug resistance mechanisms.

Author(s): Viñuelas-Bayón, Jesús; Vitoria, María Asunción; Samper, Sofía

Source: Enfermedades infecciosas y microbiologia clinica; Oct 2017; vol. 35 (no. 8); p. 520-528

Publication Type(s): Journal Article

Abstract: Tuberculosis is still a serious public health problem, with 10.8 million new cases and 1.8 million deaths worldwide in 2015. The diversity among members of the Mycobacterium tuberculosis complex, the causal agent of tuberculosis, is conducive to the design of different methods for rapid diagnosis. Mutations in the genes involved in resistance mechanisms enable the bacteria to elude the treatment. We have reviewed the methods for the rapid diagnosis of M. tuberculosis complex and the detection of susceptibility to drugs, both of which are necessary to prevent the onset of new resistance and to establish early, appropriate treatment.

In Vitro Drug Susceptibility of Bedaquiline, Delamanid, Linezolid, Clofazimine, Moxifloxacin, and Gatifloxacin against Extensively Drug-Resistant Tuberculosis in Beijing, China.

Author(s): Pang, Yu; Zong, Zhaojing; Huo, Fengmin; Jing, Wei; Ma, Yifeng; Dong, Lingling; Li, Yunxu; Zhao, Liping; Fu, Yuhong; Huang, Hairong

Source: Antimicrobial agents and chemotherapy; Oct 2017; vol. 61 (no. 10)

Publication Type(s): Journal Article

Abstract: Extensively drug-resistant tuberculosis (XDR-TB) is a deadly form of TB that can be incurable due to its extreme drug resistance. In this study, we aimed to explore the in vitro susceptibility to bedaquiline (BDQ), delamanid (DMD), linezolid (LZD), clofazimine (CLO), moxifloxacin (MFX), and gatifloxacin (GAT) of 90 XDR-TB strains isolated from patients in China. We also describe the genetic characteristics of XDR-TB isolates with acquired drug resistance. **[ABSTRACT EDITED]**

Outcome of Standardized Treatment of MDR-TB Among Young Females at Drug Resistance TB (DR-TB) Center, Patiala, India.

Author(s): Bhatnager, Arjun; Kumari, Sudesh; Poduvattil, Prasanth; Abraham, Jebin; Bharti, Anu

Source: CHEST; Oct 2017; vol. 152

Publication Type(s): Academic Journal

Resolution of a Bronchopleural Fistula Without Surgical Intervention After the Addition of Linezolid to the Treatment Regimen of Multidrug-Resistant TB.

Author(s): Ortiz-Pacheco, Ronaldo; Lardizabal, Alfred

Source: CHEST; Oct 2017; vol. 152

Publication Type(s): Academic Journal

Treatment Outcomes and Cohort Studies

Effect of glycemic control and type of diabetes treatment on unsuccessful TB treatment outcomes among people with TB-Diabetes: A systematic review.

Author(s): Shewade, Hemant Deepak; Jeyashree, Kathiresan; Mahajan, Preetam; Shah, Amar N

Source: PloS one; 2017; vol. 12 (no. 10); p. e0186697

Publication Type(s): Journal Article

Available at PLoS ONE - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDStringent glycemic control by using insulin as a replacement or in addition to oral hypoglycemic agents (OHAs) has been recommended for people with tuberculosis and diabetes mellitus (TB-DM). This systematic review (PROSPERO 2016:CRD42016039101) analyses whether this improves TB treatment outcomes.OBJECTIVESAmong people with drug-susceptible TB and DM on anti-TB treatment, to determine the effect of i) glycemic control (stringent or less stringent) compared to poor glycemic control and ii) insulin (only or with OHAs) compared to 'OHAs only' on unsuccessful TB treatment outcome(s). We looked for unfavourable TB treatment outcomes at the end of intensive phase and/or end of TB treatment (minimum six months and maximum 12 months follow up). Secondary outcomes were development of MDR-TB during the course of treatment, recurrence after 6 months and/or after 1 year post successful treatment completion and development of adverse events related to glucose lowering treatment (including hypoglycemic episodes). **[ABSTRACT EDITED]**

Alcohol drinking and cigarette smoking in relation to risk of active tuberculosis: prospective cohort study.

Author(s): Soh, Avril Zixin; Chee, Cynthia Bin Eng; Wang, Yee-Tang; Yuan, Jian-Min; Koh, Woon-Puay

Source: BMJ open respiratory research; 2017; vol. 4 (no. 1); p. e000247

Publication Type(s): Journal Article

Available at BMJ Open Respiratory Research - from Europe PubMed Central - Open Access

Abstract:INTRODUCTIONHeavy alcohol consumption increases the risk of active tuberculosis (TB). However, the relation between lower levels of alcohol intake and TB risk remains unclear. We aimed to evaluate the association between alcohol intake and risk of active TB and assess whether the associations were modified by smoking status, which is another risk factor for active TB. **[ABSTRACT EDITED]**.

Tuberculosis mortality and the male survival deficit in rural South Africa: An observational community cohort study.

Author(s): Reniers, Georges; Blom, Sylvia; Lieber, Judith; Herbst, Abraham J; Calvert, Clara;

Source: PloS one; 2017; vol. 12 (no. 10); p. e0185692

Publication Type(s): Journal Article Observational Study

Available at PLoS ONE - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDWomen live on average five years longer than men, and the sex difference in longevity is typically lower in populations with high mortality. South Africa-a high mortality population with a large sex disparity-is an exception, but the causes of death that contribute to this difference are not well understood. **[ABSTRACT EDITED]**

Pulmonary tuberculosis trends and treatment outcomes in the gomoa west district, Ghana

Author(s): Ayin C.T.; Ayetey J.

Source: Value in Health; 2017; vol. 20 (no. 9)

Publication Type(s): Conference Abstract

Abstract: Objectives: The objectives of the study were to assess the distribution of disease and treatment outcomes of pulmonary tuberculosis and identify factors associated with unsuccessful treatment outcomes. Identification of these factors help mul-tifaceted interventions targeting these factors to be recommended. **[ABSTRACT EDITED]**

Impact of mobile teams on tuberculosis treatment outcomes, Riyadh Region, Kingdom of Saudi Arabia, 2013-2015

Author(s): Alqahtani S.; Kashkary A.; Asiri A.; Kamal H.; Binongo J.; Castro K.; McNabb S.

Source: Journal of Epidemiology and Global Health; 2017

Publication Type(s): Article In Press

Abstract: The objective of this study was to evaluate the impact of the tuberculosis (TB) mobile teams on treatment outcomes in Riyadh Region by comparing patients who received treatment under mobile teams and those who did not, from 2013 to 2015. This was a retrospective descriptive study using National TB Control and Prevention Program data from 2013 to 2015 from Riyadh, Kingdom of Saudi Arabia. **[ABSTRACT EDITED]**

Treatment outcomes with daily self-administered treatment and thrice-weekly directly-observed treatment in two cohorts of newly-diagnosed, sputum-positive adults with pulmonary tuberculosis: A retrospective study from a not-for profit, private medical college in South India

Author(s): Bhatt A.N.; Tharyan P.; Michael J.S.; Christopher D.J.; Varghese G.M.; Sathyendra S.

Source: Indian Journal of Tuberculosis; 2017

Publication Type(s): Article In Press

Abstract: Background: The Revised National Tuberculosis Control Program (RNTCP) envisages shifting from thrice-weekly to a daily anti-tuberculosis treatment (ATT) regimen. The potential merits and demerits of both regimens continue to be debated. **[ABSTRACT EDITED]**

High efflux pump activity and gene expression at baseline linked to poor tuberculosis treatment outcomes

Author(s): Mazando S.; Zimudzi C.; Zimba M.; Sande S.; Gundidza M.; Mazorodze J.H.; Seepe P.M.M.

Source: Journal of Medical and Biomedical Sciences; 2017; vol. 6 (no. 1); p. 8-17

Publication Type(s): Article

Abstract: Phenotypic TB drug resistance, also known as drug tolerance, has been previously attributed to slowed bacterial growth in vivo. The increased activity and expression of efflux systems can lower the intracellular concentration of many antibiotics thus reducing their efficacy. We hypothesized that efflux pump activation and expression could be a risk factor for TB drug tolerance in patients initiated on treatment. **[ABSTRACT EDITED]**

Heavy alcohol consumption increases the risk of active tuberculosis in Taiwanese adults: a nation-wide population-based cohort study.

Author(s): Yen, Yung-Feng; Hu, Hsiao-Yun; Lee, Ya-Ling; Ku, Po-Wen; Chuang, Pei-Hung; Lai, Yun-Ju

Source: Addiction; Dec 2017; vol. 112 (no. 12); p. 2124-2131

Publication Type(s): Academic Journal

Abstract: Aims To investigate the impact of alcohol exposure on tuberculosis (TB) development in Taiwanese adults. Design Participants from the Taiwan National Health Interview Survey. Alcohol

consumption and other covariates were collected by in-person interviews at baseline. Incident cases of active TB were identified from the National Health Insurance database. A multivariable Cox regression model was used to estimate the association between alcohol consumption and active TB, with adjustment for age, sex, smoking, socio-economic status and other covariates. Setting Taiwan National Health Interview Survey. **[ABSTRACT EDITED]**

Establishing a cohort in a developing country: Experiences of the diabetes-tuberculosis treatment outcome cohort study.

Author(s): Mukhtar, Fatima; Butt, Zahid A

Source: Journal of epidemiology and global health; Dec 2017; vol. 7 (no. 4); p. 249-254

Publication Type(s): Journal Article

Abstract:BACKGROUNDProspective cohort studies are instrumental in generating valid scientific evidence based on identifying temporal associations between cause and effect. Researchers in a developing country like Pakistan seldom undertake cohort studies hence little is known about the challenges encountered while conducting them. We describe the retention rates among tuberculosis patients with and without diabetes, look at factors associated with loss to follow up among the cohort and assess operational factors that contributed to retention of cohort. **[ABSTRACT EDITED]**

Prevalence of rifampicin-resistant Mycobacterium tuberculosis among human-immunodeficiency-virus-seropositive patients and their treatment outcomes.

Author(s): Vidyaraj, C K; Chitra, A; Smita, S; Muthuraj, M; Govindarajan, S; Usharani, B; Anbazhagi, S

Source: Journal of epidemiology and global health; Dec 2017; vol. 7 (no. 4); p. 289-294

Publication Type(s): Journal Article

Abstract: Multidrug resistant (MDR) and extensively drug resistant tuberculosis (TB) are a threat to the TB control programs in developing countries, and the situation is worsened by the human immunodeficiency virus (HIV) pandemic. This study was performed to correlate treatment outcome with the resistance patterns in HIV-seropositive patients coinfected with pulmonary TB. **[ABSTRACT EDITED]**

Reactions in HIV Coinfected Tuberculosis Patients: A Matched-Cohort Study.

Author(s): Matono, Takashi; Nishijima, Takeshi; Teruya, Katsuji; Morino, Eriko; Takasaki, Jin; Gatanaga, Hiroyuki; Kikuchi, Yoshimi; Kaku, Mitsuo; Oka, Shinichi

Source: AIDS Patient Care & STDs; Nov 2017; vol. 31 (no. 11); p. 455-462

Publication Type(s): Academic Journal

Abstract: Little information exists on the frequency, severity, and timing of first-line anti-tuberculosis drug-related adverse events (TB-AEs) in HIV-tuberculosis coinfected (HIV-TB) patients in the antiretroviral therapy (ART) era. This matched-cohort study included HIV-TB patients as cases and HIV-uninfected tuberculosis (non-HIV-TB) patients as controls. **[ABSTRACT EDITED]**

Tuberculosis Treatment Outcomes in Europe: Based on Treatment Completion, Not Cure.

Author(s): Dedicoat, Martin J.; Günther, Gunar; Crudu, Valeriu; Duarte, Raquel; Gualano, Gina;

Source: American Journal of Respiratory & Critical Care Medicine; Nov 2017; vol. 196 (no. 9); p. 1222-1224

Publication Type(s): Academic Journal

Available at American Journal of Respiratory and Critical Care Medicine - from EBSCO (MEDLINE Complete)

Injecting drug use predicts active tuberculosis in a national cohort of people living with HIV.

Author(s): Winter, Joanne R; Stagg, Helen R; Smith, Colette J; Brown, Alison E; Lalor, Maeve K

Source: AIDS (London, England); Nov 2017; vol. 31 (no. 17); p. 2403-2413

Publication Type(s): Journal Article

Abstract:OBJECTIVESTuberculosis (TB) is common in people living with HIV, leading to worse clinical outcomes including increased mortality. We investigated risk factors for developing TB following HIV diagnosis.DESIGNAdults aged at least 15 years first presenting to health services for HIV care in England, Wales or Northern Ireland from 2000 to 2014 were identified from national HIV surveillance data and linked to TB surveillance data. **[ABSTRACT EDITED]**

Risk of Cardiovascular Event and Influence of Pyrazinamide in Patients With Active TB in South Korea: A Population-Based Cohort Study.

Author(s): Oh, Dong Kyu; Jo, Kyung-Wook; Kim, Ye-Ji; Kim, Seon Ok; Kim, Young-Hak; Kang, Jieun;

Publication Date: Oct 2017

Publication Type(s): Academic Journal

Treatment outcomes of rifampin-sparing treatment in patients with pulmonary tuberculosis with rifampin-mono-resistance or rifampin adverse events: A retrospective cohort analysis.

Author(s): Park, Shinhee; Jo, Kyung-Wook; Lee, Sang Do; Kim, Woo Sung; Shim, Tae Sun

Source: Respiratory medicine; Oct 2017; vol. 131 ; p. 43-48

Publication Type(s): Journal Article

Abstract:BACKGROUNDRifampin (RIF) mono-resistant tuberculosis (RMR-TB) is a rare disease. Current guidelines recommend that RMR-TB be treated as multidrug-resistant TB (MDR-TB) but the evidence is scarce. **[ABSTRACT EDITED]**

Interim outcomes of delamanid for the treatment of MDR- and XDR-TB in South Korea.

Author(s): Mok, Jeongha; Kang, Hyungseok; Hwang, Soo Hee; Park, Jin Su; Kang, Bohyoung; Lee, Taehoon; Koh, Won-Jung; Yim, Jae-Joon; Jeon, Doosoo

Source: The Journal of antimicrobial chemotherapy; Oct 2017

Publication Type(s): Journal Article

Abstract: ObjectivesDelamanid is a new anti-TB drug, but few data exist on its use outside clinical trials. The purpose of this study was to evaluate the efficacy as well as the safety and tolerability of a delamanid-containing regimen for 24 weeks in the treatment of MDR- and XDR-TB. **[ABSTRACT EDITED]**

Excellent Treatment Outcomes in Children Treated for Tuberculosis Under Routine Operational Conditions in Cape Town, South Africa.

Author(s): Osman, Muhammad; Lee, Kevin; Du Preez, Karen; Dunbar, Rory; Hesseling, Anneke C

Source: Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Oct 2017; vol. 65 (no. 9); p. 1444-1452

Publication Type(s): Journal Article

Abstract: BackgroundTuberculosis (TB) remains a leading cause of death in children globally. It is recognized that human immunodeficiency virus (HIV) infection increases the risk of developing TB, but our understanding of the impact of HIV on risk of mortality for children treated for TB is limited. We aimed to identify predictors of mortality in children treated for drug-susceptible TB. **[ABSTRACT EDITED]**

Treatment and outcome of non-tuberculous mycobacterial pulmonary disease in a predominantly fibro-cavitary disease cohort.

Author(s): Zweijpfenning, Sanne; Kops, Stephan; Magis-Escurra, Cecile; Boeree, Martin J

Source: Respiratory medicine; Oct 2017; vol. 131 ; p. 220-224

Publication Type(s): Journal Article

Abstract:BACKGROUNDThe incidence of non-tuberculous mycobacterial pulmonary disease (NTM-PD) has increased in the Netherlands. The fibro-cavitary disease manifestation predominates, as elsewhere in Europe. We studied treatment and outcome of this disease manifestation, as such data are scarce. **[ABSTRACT EDITED]**

Video Directly Observed Therapy to support adherence with treatment for tuberculosis in Vietnam: A prospective cohort study.

Author(s): Nguyen, Thu Anh; Pham, Minh Tam; Nguyen, Thi Loi; Nguyen, Viet Nhung

Source: International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases; Oct 2017; vol. 65 ; p. 85-89

Publication Type(s): Journal Article

Abstract:BACKGROUNDEnsuring patients fully adhere to their treatment is a major challenge for TB control programmes in resource-limited settings. This study was conducted three outpatient tuberculosis clinics in Hanoi, Vietnam. We aimed to evaluate the feasibility of using asynchronous Video Directly Observed Therapy (VDOT) to support treatment adherence among patients with bacteriologically confirmed pulmonary tuberculosis. **[ABSTRACT EDITED]**

Incidence of active tuberculosis in individuals with latent tuberculosis infection in rural China: follow-up results of a population-based, multicentre, prospective cohort study.

Author(s): Gao, Lei; Li, Xiangwei; Liu, Jianmin; Wang, Xinhua; Lu, Wei; Bai, Liqiong; Xin, Henan;

Source: The Lancet. Infectious diseases; Oct 2017; vol. 17 (no. 10); p. 1053-1061

Publication Type(s): Multicenter Study Journal Article

Available at The Lancet infectious diseases - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract:BACKGROUNDThe management of latent Mycobacterium tuberculosis infection is a new priority action for the WHO End Tuberculosis (TB) Strategy. However, national guidelines on latent tuberculosis infection testing and treatment have not yet been developed in China. Here, we present the results from the 2-year follow-up of a study that aimed to track the development of active disease in individuals with latent tuberculosis infection, identify priority populations for latent infection management, and explore the most suitable latent infection diagnostic approach. **[ABSTRACT EDITED]**

Fluoroquinolone Resistance Mutation Detection Is Equivalent to Culture-Based Drug Sensitivity Testing for Predicting Multidrug-Resistant Tuberculosis Treatment Outcome: A Retrospective Cohort Study.

Author(s): Farhat, Maha R; Jacobson, Karen R; Franke, Molly F; Kaur, Devinder; Murray, Megan;

Source: Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Oct 2017; vol. 65 (no. 8); p. 1364-1370

Publication Type(s): Journal Article

Abstract: BackgroundMolecular diagnostics that rapidly and accurately predict fluoroquinolone (FQ) resistance promise to improve treatment outcomes for individuals with multidrug-resistant (MDR) tuberculosis (TB). Mutations in the gyr genes, though, can cause variable levels of in vitro FQ resistance, and some in vitro resistance remains unexplained by gyr mutations alone, but the implications of these discrepancies for treatment outcome are unknown. **[ABSTRACT EDITED]**

Safety and tolerability of two regimens used to treat multidrug resistant tuberculosis in Kinshasa: A prospective cohort

Author(s): Lula Y.; Engo A.; Nsimba G.; Mesia G.; Tona G.; Van Geertruyden J.P.; Mbo J.; Mulongo R.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 188-189

Publication Type(s): Conference Abstract

Abstract: Introduction Democratic Republic of Congo (DRC) accounted among high multi-drug (MDR) Tuberculosis (TB) burden countries (1). Since 2013, the national TB programme has introduced a shorter regimen for treatment of MDR TB (9 months vs. 20 months for the existing one) under operational research conditions. Aim The aim of the present study was to assess the safety and tolerability of shorter regimen (SR) in comparison with the long regimen (LR). **[ABSTRACT EDITED]**

Tuberculosis treatment outcomes among TB/HIV coinfected cases treated under directly observed treatment of short course in Nekemte, Western Ethiopia

Author(s): Ejeta E.; Birhanu T.; Wolde T.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 210

Publication Type(s): Conference Abstract

Abstract: Introduction Tuberculosis (TB) and Human immunodeficiency virus (HIV) co-epidemics remain a major public health challenge, particularly in low income countries. Treatment outcome is an important indicator of Tuberculosis control programs as the World Health Organization suggested. However, this was not well documented in the study area. Objective To assess the tuberculosis treatment outcome of tuberculosis and human immunodeficiency co-infection patients attending DOTs services selected health institutions in Nekemte Town Western Ethiopia. **[ABSTRACT EDITED]**

New diagnostic tests for tuberculosis: Performance of LAM and Xpert MTB/RIF in urine of hospitalized patients on intensive phase of TB treatment, and its association with TB dissemination and HIV status. Preliminary results from an observational cohort study in Kigali, Rwanda

Author(s): Leopold B.; Samuel N.; Aimable D.; Joannes C.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 35

Publication Type(s): Conference Abstract

Abstract: Introduction TB diagnosis is presumed on clinical and medical imaging criteria in about 40% of hospitalized patients treated for TB. Measuring lipo-arabinomannan (LAM), a liposaccharide from the mycobacterial wall, and mycobacterial DNA by Xpert MTD/RIF in urine may be useful additions to the classic sputum exams. Study objectives LAM and Xpert MTB/RIF in urine is measured qualitatively in hospitalized patients treated for TB, in relation with TB disease dissemination, HIV coinfection and TB diagnostic confirmation by sputum microscopy. **[ABSTRACT EDITED]**

Incidence and clinical characteristics of active tuberculosis in a cohort of patients with inflammatory arthritis treated with tnf-inhibitors

Author(s): Gheorghiu A.M.; Sasu M.; Ciofu C.; Macovei L.; Garaiman A.; Radu A.; Pintilie S.; Martin A.

Source: Arthritis and Rheumatology; Oct 2017; vol. 69

Publication Type(s): Conference Abstract

Abstract: Background/Purpose: Tuberculosis (TB) is a major concern in patients receiving TNF inhibitors (TNFi). Objectives: To assess the incidence of active TB and the efficacy of TB prevention measures in a large, single-center cohort of patients with rheumatoid arthritis (RA), psoriatic arthritis (PsA) and ankylosing spondylitis (AS) receiving TNFi. **[ABSTRACT EDITED]**

Ongoing elevated risk of developing tuberculosis in rheumatological conditions where Anti-TNF-alpha agents were used: Results of 2-year retrospective cohort study

Author(s): Aydin V.; Akici A.; Isli F.; Aksoy M.; Gursoz H.

Source: Drug Safety; Oct 2017; vol. 40 (no. 10); p. 1028

Publication Type(s): Conference Abstract

Abstract: Introduction: We recently showed that 1-year treatment with anti-tumor necrosis factor-alpha (anti-TNF-a) drugs increased the risk of tuberculosis in patients with certain rheumatologic diseases (RD) [1]. Several studies reported the time to develop tuberculosis from the start of anti-TNF-a therapy up to 15 months [2,3]. Aim: To determine the relative risk of developing tuberculosis during 2-year usage of anti-TNF-a in RD patients. **[ABSTRACT EDITED]**

Effectiveness of Canada's tuberculosis surveillance strategy in identifying immigrants at risk of developing and transmitting tuberculosis: a population-based retrospective cohort study

Author(s): Asadi L.; Heffernan C.; Long R.; Menzies D.

Source: The Lancet Public Health; Oct 2017; vol. 2 (no. 10)

Publication Type(s): Article

Abstract: Background In Canada, tuberculosis disproportionately affects the foreign-born population. The national tuberculosis medical surveillance programme aims to prevent these cases. Individuals referred for further in-country surveillance (referrals) have a history of active tuberculosis or have features of old, healed tuberculosis on chest radiograph; those not referred (non-referrals) do not undergo surveillance. We aimed to examine the risk of transmission arising from referrals versus non-referrals. **[ABSTRACT EDITED]**

Tuberculous anal fistulae: A prospective cohort study

Author(s): Dalwai E.K.; Goldberg P.; Dheda K.

Source: Colorectal Disease; Oct 2017; vol. 19 ; p. 9

Publication Type(s): Conference Abstract

Abstract: Background: Our unit previously reported tuberculosis in 7% of anal fistulae Diagnosis was frequently delayed supporting our hypothesis that our current diagnostics for Tuberculosis (TB) are inadequate. The GeneXpert MTB/RIF, a rapid nucleic acid amplification test, is a WHO recommended test for pulmonary TB Aim & Methods: A prospective study of the incidence of tuberculosis in anal fistulae employing the GeneXpert MTB/RIF in addition to TB culture and histopathology at a tertiary colorectal unit. Demographic, surgical and treatment data were collected **[ABSTRACT EDITED]**

Controlled Trials and Systematic Reviews

HIV and tuberculosis co-infection among migrants in Europe: A systematic review on the prevalence, incidence and mortality

Author(s): Tavares A.M.; Fronteira I.; Couto I.; Machado D.; Viveiros M.; Abecasis A.B.; Dias S.

Source: PloS one; 2017; vol. 12 (no. 9)

Publication Type(s): Article

Available at PLoS ONE - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUND: International human migration has been rapidly growing. Migrants coming from low and middle income countries continue to be considerably vulnerable and at higher risk for infectious diseases, namely HIV (Human Immunodeficiency Virus) and tuberculosis (TB). In Europe, the number of patients with HIV-TB co-infection has been increasing and migration could be one of the potential driving forces.OBJECTIVE: This systematic review aims to improve the understanding on the burden of HIV-TB co-infection among migrants in Europe and to assess whether these populations are particularly vulnerable to this co-infection compared to nationals. **[ABSTRACT EDITED]**

The efficacy and safety of adjunctive corticosteroids in the treatment of tuberculous pleurisy: A systematic review and meta-analysis

Author(s): Xie S.; Li M.; Zhang G.; Peng A.; Wang C.; Lu L.; Xiong M.; Zhou S.

Source: Oncotarget; 2017; vol. 8 (no. 47); p. 83315-83322

Publication Type(s): Review

Available at Oncotarget - from Europe PubMed Central - Open Access

Abstract: Purpose: To evaluate the efficacy and safety of adjunctive corticosteroids in the treatment of patients with tuberculous pleurisy. **[ABSTRACT EDITED]**

Efficacy of ultra-short course chemotherapy for new smear positive drug susceptible pulmonary tuberculosis: Study protocol of a multicenter randomized controlled clinical trial

Author(s): Gao M.; Gao J.; Du J.; Liu Y.; Ma L.; Mi F.; Li L.; Tang S.; Zhang Y.; Shenjie T.; Liang L.;

Source: BMC Infectious Diseases; 2017; vol. 17 (no. 1)

Publication Type(s): Article

Available at BMC Infectious Diseases - from EBSCO (MEDLINE Complete)

Abstract: Background: Shortening the standard 6-month treatment for drug-susceptible pulmonary tuberculosis (DS-PTB) would be a major improvement for TB case management and disease control. Methods: We are conducting a randomized, open-label, controlled, non-inferiority trial involving patients with smear-positive, newly diagnosed DS-PTB cases nationwide to assess the efficacy and

safety of two 4.5- month regimens in comparison to the standard 6-month WHO recommended regimen. **[ABSTRACT EDITED]**

Total hip replacement in tuberculosis of hip: A systematic review

Author(s): Tiwari A.; Karkhur Y.; Maini L.

Source: Journal of Clinical Orthopaedics and Trauma; 2017

Publication Type(s): Article In Press

Available at Journal of Clinical Orthopaedics and Trauma - from Europe PubMed Central - Open Access

Abstract: Total hip replacement (THR) in patients with tuberculous arthritis of the hip is controversial. The timing of surgery, type of prosthesis, reactivation of the disease, high complication rates and the long-term survival of the reconstruction are the major conc erns. There is little information regarding this concern in the literature. We conducted a systematic review of published studies on Total Hip Replacement in patients with Tuberculosis of the hip. **[ABSTRACT EDITED]**

Tubercular Abdominal Cocoon: Systematic Review of an Uncommon Form of Tuberculosis

Author(s): Sharma V.; Singh H.; Mandavdhare H.S.

Source: Surgical Infections; 2017; vol. 18 (no. 6); p. 736-741

Publication Type(s): Article

Abstract: Background: Abdominal cocoon formation is an uncommon manifestation of abdominal tuberculosis that is characterized by the formation of a fibrous membrane-like sac around the small intestinal loops. Appropriate treatment and outcomes are uncertain Objectives: To review the clinical presentation, treatment, and outcomes for tubercular abdominal cocoon (TAC). Patients and **[ABSTRACT EDITED]**

Prevalence of and risk factors for multidrug-resistant tuberculosis in Iran and its neighboring countries: Systematic review and meta-analysis

Author(s): Jimma W.; Abdurahman A.A.; Ghazisaeedi M.; Shahmoradi L.; Kalhori S.R.N.; Safdari R.

Source: Revista da Sociedade Brasileira de Medicina Tropical; 2017; vol. 50 (no. 3); p. 287-295

Publication Date: 2017

Publication Type(s): Review

Available at Revista da Sociedade Brasileira de Medicina Tropical - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract: Tuberculosis, in particular drug-resistant tuberculosis, is of global concern due to the high mortality and morbidity associated with it annually. The aim of this study was to determine the prevalence of and the risk factors for multidrug-resistant tuberculosis in Iran and its neighboring countries. **[ABSTRACT EDITED]**

Prise en charge decentralisee de la tuberculose multiresistante: Revue systematique et meta-analyseAtencion descentralizada para la tuberculosis multirresistente: Una revision sistematica y un metaanalisisDecentralized care for multidrug-resistant tuberculosis: A systematic review and meta-analysis

Author(s): Ho J.; Byrne A.L.; Linh N.N.; Jaramillo E.; Fox G.J.

Source: Bulletin of the World Health Organization; 2017; vol. 95 (no. 8); p. 584-593

Publication Type(s): Review

Available at Bulletin of the World Health Organization - from EBSCO (MEDLINE Complete)

Abstract: Objective To assess the effectiveness of decentralized treatment and care for patients with multidrug-resistant (MDR) tuberculosis, in comparison with centralized approaches. **[ABSTRACT EDITED]**

Cbnaat (xpert MTB/RIF) for rapid detection of childhood tuberculosis and rifampicin resistance: A systematic review and meta-analysis

Author(s): Singh M.; Jaiswal N.; Thumburu K.K.; Chauhan A.; Agarwal A.; Pant P.; Dhatwalia S.K.

Source: American Journal of Respiratory and Critical Care Medicine; 2017; vol. 195

Publication Type(s): Conference Abstract

Abstract: Back ground Childhood Tuberculosis and drug resistance is difficult to diagnose due to paucibacilliary condition and atypical radiological findings. The available systematic reviews focus on the diagnostic accuracy of CBNAAT for adult tuberculosis. Present systematic review focuses on diagnostic accuracy of CBNAAT for detection of Mycobacterium tuberculosis and drug resistance in all forms of childhood Tuberculosis. **[ABSTRACT EDITED]**

Sputum quality and bacteriological positivity comparison between intervention of individually-guided active cycle breathing technique (ACBT) and video-guided ACBT in tuberculosis case detection: A randomized controlled trial

Author(s): Desianti G.; Burhan E.; Ratnawati A.

Source: American Journal of Respiratory and Critical Care Medicine; 2017; vol. 195

Publication Type(s): Conference Abstract

Abstract: Background: Tuberculosis case finding plays an important role in decreasing complication and mortality rate. Sputum is an integral part for bacteriological diagnosis of pulmonary tuberculosis so it should be represent lower respiratory tract secretion. It could be described by good sputum quality so it will have a higher positivity rate in bacteriological result. Nowdays, it still felt quite hard for getting good sputum specimen for diagnostic procedure so it is needed a new method for increasing sputum expectoration, such as active cycle breathing technique (ACBT) method. So the primary aim of this research is to evaluate the effectivity of ACBT (2 type ACBT methods) in sputum result of pulmonary TB patient, both regarding sputum quality and also bacteriological sputum positivity level. **[ABSTRACT EDITED]**

Research on tuberculosis in tribal areas in India: A systematic review

Author(s): Rao V.G.; Bhat J.; Yadav R.; Sharma R.; Muniyandi M.

Source: Indian Journal of Tuberculosis; 2017

Publication Type(s): Article In Press

Abstract: Background: Tuberculosis (TB) remains a major public health problem in resource-poor countries including India. Scientific knowledge is used to guide policy and practice. There is however, a limited, systematically collected data required for guiding the scale-up of interventions particularly amongst vulnerable populations including tribal groups in the country. In view of this, a systematic review of the TB research studies carried out in tribal areas of different parts of the country was undertaken. Objective: To undertake a systematic review of the TB research studies carried out in tribal areas of India between 1996 and 2016. **[ABSTRACT EDITED]**

Systematic review on the proteomic profile of Mycobacterium tuberculosis exposed to drugs

Author(s): Campanerut-Sa P.A.Z.; Ghiraldi-Lopes L.D.; Meneguello J.E.; Teixeira J.J.V.; Scodro R.B.d.L.

Source: Proteomics - Clinical Applications; 2017

Publication Type(s): Article In Press

Abstract: The authors present an overview about proteomics studies in Mycobacterium tuberculosis exposed to some anti-tuberculosis drugs and new candidates, using two-dimensional gel electrophoresis and mass spectrometry. To date, that the authors have knowledge, this is the first studies that was performed specifically in M. tuberculosis using systematic review on electronic literature conducted in three databases using the following search terms: tuberculosis OR mycobacterium tuberculosis, proteome OR proteomics, and mass spectrometry electrospray ionization OR matrix-assisted laser desorption ionization OR two-dimensional gel electrophoresis. **[ABSTRACT EDITED]**

Comparison of sputum collection methods for tuberculosis diagnosis: A systematic review and pairwise and network meta-analysis

Author(s): Datta S.; Evans C.A.; Shah L.; Gilman R.H.

Source: The Lancet Global Health; 2017

Publication Type(s): Article In Press

Abstract: Background: The performance of laboratory tests to diagnose pulmonary tuberculosis is dependent on the quality of the sputum sample tested. The relative merits of sputum collection methods to improve tuberculosis diagnosis are poorly characterised. We therefore aimed to investigate the effects of sputum collection methods on tuberculosis diagnosis. **[ABSTRACT EDITED]**

Immunotherapy in viral warts with intradermal Bacillus Calmette-Guerin vaccine versus intradermal tuberculin purified protein derivative: A double-blind, randomized controlled trial comparing effectiveness and safety in a tertiary care center in Eastern India

Author(s): Podder I.; Bhattacharya S.; Mishra V.; Sarkar T.K.; Chandra S.; Kumar D.; Saha A.

Source: Indian Journal of Dermatology, Venereology and Leprology; 2017; vol. 83 (no. 3); p. 411

Publication Type(s): Article

Available at Indian Journal of Dermatology, Venereology and Leprology - from EBSCO (MEDLINE Complete)

Abstract: Background: Current therapeutic modalities for viral warts are mostly ablative and are limited by high recurrence rates besides being unsuitable for numerous lesions. Immunotherapy has the potential to overcome these limitations. Aims: The aim of this study was to compare the effectiveness and safety of Bacillus Calmette-Guerin vaccine versus tuberculin purified protein derivative in the immunotherapy of warts. **[ABSTRACT EDITED]**

Effect of intermittency on treatment outcomes in pulmonary tuberculosis: An updated systematic review and metaanalysis

Author(s): Johnston J.C.; Campbell J.R.; Menzies D.

Source: Clinical Infectious Diseases; 2017; vol. 64 (no. 9); p. 1211-1220

Publication Type(s): Article

Abstract: Background. Intermittent regimens offer operational advantages in tuberculosis treatment, but their efficacy has been questioned. We updated a systematic review and metaanalysis to

examine the efficacy of different intermittent dosing schedules in firstline pulmonary tuberculosis therapy. **[ABSTRACT EDITED]**

Risk of active tuberculosis in patients with cancer: A systematic review and metaanalysis

Author(s): Cheng M.P.; Yansouni C.P.; Chakra C.N.A.; Cnossen S.; Shrier I.; Greenaway C.; Menzies D.

Source: Clinical Infectious Diseases; 2017; vol. 64 (no. 5); p. 635-644

Publication Type(s): Review

Abstract: Background. Cancer is a known risk factor for developing active tuberculosis. We determined the incidence and relative risk of active tuberculosis in cancer patients compared to the general population. **[ABSTRACT EDITED]**

Prevalence of Beijing and Haarlem genotypes among multidrug-resistant Mycobacterium tuberculosis in Iran: Systematic review and meta-analysis

Author(s): Tarashi S.; Fateh A.; Rahimi Jamnani F.; Siadat S.D.; Vaziri F.

Source: Tuberculosis; Dec 2017; vol. 107 ; p. 31-37

Publication Type(s): Review

Abstract: Antimicrobial drug resistance creates major problems in the control of tuberculosis (TB). Beijing and Haarlem genotypes of Mycobacterium tuberculosis are the prevalent genotypes responsible for multidrug resistant (MDR) TB worldwide. The aim of this study was to conduct a systematic review using meta-analysis to indicate the prevalence of Beijing and Haarlem genotypes among MDR-TB cases in Iran. **[ABSTRACT EDITED]**

Evidence-based interventions to reduce tuberculosis stigma: A systematic review

Author(s): Sommerland N.; Wouters E.; Masquillier C.; Mitchell E.M.H.; Ngicho M.; Redwood L.

Source: International Journal of Tuberculosis and Lung Disease; Nov 2017; vol. 21

Publication Type(s): Review

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:SETTING: While substantial progress is being made in tuberculosis (TB) control, the success of public health efforts is hampered by pervasive stigma. OBJECTIVE: To perform a systematic literature review to assess the effectiveness of interventions aimed at reducing TB stigma in patients, health care workers, care givers and the general community. **[ABSTRACT EDITED]**

Secondary analysis of tuberculosis stigma data from a cluster randomised trial in Zambia and South Africa (ZAMSTAR)

Author(s): Bond V.; Schaap A.; Shanaube K.; Ayles H.; Floyd S.; Fenty J.; Godfrey-Faussett P.

Source: International Journal of Tuberculosis and Lung Disease; Nov 2017; vol. 21

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:SETTING: Zambian and South African TB and HIV Reduction (ZAMSTAR) cluster-randomised trial (CRT) communities, 2006-2009. OBJECTIVES: To develop TB stigma items, and evaluate changes in them in response to a household intervention aimed at reducing TB transmission and prevalence but not tailored to reduce stigma. **[ABSTRACT EDITED]**

Time to treatment for rifampicin-resistant tuberculosis: Systematic review and meta-analysis

Author(s): Boyd R.; Cox H.; Ford N.; Padgen P.

Source: International Journal of Tuberculosis and Lung Disease; Nov 2017; vol. 21 (no. 11)

Publication Type(s): Article

Available at The International Journal of Tuberculosis and Lung Disease - from IngentaConnect - Open Access

Abstract:BACKGROUND: To reduce transmission and improve patient outcomes, rapid diagnosis and treatment of rifampicin-resistant tuberculosis (RR-TB) is required. OBJECTIVE: To conduct a systematic review and meta-analysis assessing time to treatment for RR-TB and variability using diagnostic testing methods and treatment delivery approach. **[ABSTRACT EDITED]**

Bovine tuberculosis in Ethiopia: A systematic review and meta-analysis

Author(s): Sibhat B.; Asmare K.; Demissie K.; Ayelet G.; Mamo G.; Ameni G.

Source: Preventive Veterinary Medicine; Nov 2017; vol. 147 ; p. 149-157

Publication Type(s): Review

Abstract: Bovine tuberculosis (bTB) is a known endemic disease of cattle in Ethiopia; however, there is lack of a comprehensive information on the status and distribution of the disease in the country. The objectives of this systematic review and meta-analysis were to provide a pooled prevalence estimate of bTB at a national level, assess the level of in-between variance among study reports and illustrate the spatial distribution pattern in the country. **[ABSTRACT EDITED]**

Effectiveness of real-time polymerase chain reaction assay for the detection of Mycobacterium tuberculosis in pathological samples: A systematic review and meta-analysis

Author(s): Babafemi E.O.; Cherian B.P.; Banting L.; Mills G.A.; Ngianga K.

Source: Systematic Reviews; Oct 2017; vol. 6 (no. 1)

Publication Type(s): Article

Available at Systematic Reviews - from Europe PubMed Central - Open Access

Abstract: Background: Rapid and accurate diagnosis of tuberculosis (TB) is key to manage the disease and to control and prevent its transmission. Many established diagnostic methods suffer from low sensitivity or delay of timely results and are inadequate for rapid detection of Mycobacterium tuberculosis (MTB) in pulmonary and extra-pulmonary clinical samples. This study examined whether a real-time polymerase chain reaction (RT-PCR) assay, with a turn-a-round time of 2 h, would prove effective for routine detection of MTB by clinical microbiology laboratories. **[ABSTRACT EDITED]**

Multidrug resistant tuberculosis in Ethiopian settings and its association with previous history of anti-tuberculosis treatment: A systematic review and meta-analysis

Author(s): Eshetie S.; Gizachew M.; Dagnew M.; Tessema B.; Moges F.; Kumera G.; Woldie H.

Source: Tropical Medicine and International Health; Oct 2017; vol. 22 ; p. 213

Publication Type(s): Conference Abstract

Available at Tropical Medicine & International Health - from IngentaConnect - Open Access

Abstract: Introduction Efforts to control the global burden of tuberculosis (TB) have been jeopardized by the rapid evolution of multi-drug resistant Mycobacterium tuberculosis (MTB), which is resistant

to at least isoniazid and rifampicin. Previous studies have documented variable prevalences of multidrugresistant tuberculosis (MDR-TB) and its risk factors in Ethiopia. Aim This meta-analysis is aimed, firstly, to determine the pooled prevalence of MDR-TB among newly diagnosed and previously treated TB cases, and secondly, to measure the association between MDR-TB and a history of previous anti-TB drugs treatment. **[ABSTRACT EDITED]**

Effect of glycemic control and type of diabetes treatment on unsuccessful TB treatment outcomes among people with TB-Diabetes: A systematic review

Author(s): Shewade H.D.; Kumar A.M.V.; Jeyashree K.; Mahajan P.; Shah A.N.; Kirubakaran R.; Rao R.

Source: PLoS ONE; Oct 2017; vol. 12 (no. 10)

Publication Type(s): Review

Available at PLoS ONE - from EBSCO (MEDLINE Complete)

Abstract: Background Stringent glycemic control by using insulin as a replacement or in addition to oral hypoglycemic agents (OHAs) has been recommended for people with tuberculosis and diabetes mellitus (TB-DM). This systematic review (PROSPERO 2016:CRD42016039101) analyses whether this improves TB treatment outcomes. Objectives Among people with drug-susceptible TB and DM on anti-TB treatment, to determine the effect of i) glycemic control (stringent or less stringent) compared to poor glycemic control and ii) insulin (only or with OHAs) compared to 'OHAs only' on unsuccessful TB treatment outcome(s). **[ABSTRACT EDITED]**

Pulmonary resection for patients with multidrug-resistant tuberculosis based on survival outcomes: A systematic review and meta-analysis

Author(s): Roh H.F.; Kim J.M.; Kim J.; HyukNam S.

Source: European Journal of Cardio-thoracic Surgery; Oct 2017; vol. 52 (no. 4); p. 673-678

Publication Type(s): Review

Abstract: We investigated the survival benefit of pulmonary resection for patients with multidrug-resistant tuberculosis. To weigh the survival benefit of pulmonary resection for patients with multidrug-resistant tuberculosis who have undergone surgical treatment combined with medical chemotherapy compared with medical chemotherapy alone, we did a meta-analysis of available studies containing a hazard ratio for pulmonary resection. **[ABSTRACT EDITED]**

Impact of point-of-care xpert MTB/RIF on tuberculosis treatment initiation: A cluster-randomized trial

Author(s): Lessells R.J.; Godfrey-Faussett P.; Cooke G.S.; McGrath N.; Newell M.-L.; Nicol M.P.

Source: American Journal of Respiratory and Critical Care Medicine; Oct 2017; vol. 196 (no. 7); p. 901-910

Publication Type(s): Article

Available at American Journal of Respiratory and Critical Care Medicine - from EBSCO (MEDLINE Complete)

Abstract: Rationale: Point-of-care (POC) diagnostics have the potential to reduce pretreatment loss to follow-up and delays to initiation of appropriate tuberculosis (TB) treatment. Objectives: To evaluate the effect of a POC diagnostic strategy on initiation of appropriate TB treatment. **[ABSTRACT EDITED]**

Systematic review and meta-analysis of the nitrate reductase assay for drug susceptibility testing of Mycobacterium tuberculosis and the detection limits in liquid medium

Author(s): Kwak M.; Lee W.-K.; Lim Y.J.; Lee S.H.; Ryoo S.

Source: Journal of Microbiological Methods; Oct 2017; vol. 141 ; p. 1-9

Publication Type(s): Article

Abstract: Recently, the need for rapid, reliable, and low-cost drug susceptibility testing (DST) methods has increased due to the emergence of multidrug-resistant Mycobacterium tuberculosis. Colorimetric methods of DST provide results more quickly than standard culture methods and are inexpensive than molecular methods. Thus, colorimetric methods, such as the nitrate reductase assay (NRA), are being recommended. We searched Medline PubMed for reports on the NRA for DST of M. tuberculosis written in English and published within the last five years. **[ABSTRACT EDITED]**

Biomarkers of Tuberculosis Severity and Treatment Effect: A Directed Screen of 70 Host Markers in a Randomized Clinical Trial.

Author(s): Sigal, G B; Segal, M R; Mathew, A; Jarlsberg, L; Wang, M; Barbero, S; Small, N

Source: EBioMedicine; Oct 2017

Publication Type(s): Journal Article

Available at EBioMedicine - from Europe PubMed Central - Open Access

Abstract: More efficacious treatment regimens are needed for tuberculosis, however, drug development is impeded by a lack of reliable biomarkers of disease severity and of treatment effect. We conducted a directed screen of host biomarkers in participants enrolled in a tuberculosis clinical trial to address this need. **[ABSTRACT EDITED]**

Prevalence of drug-resistant pulmonary tuberculosis in India: systematic review and meta-analysis.

Author(s): Goyal, Vishal; Kadam, Vijay; Narang, Prashant; Singh, Vikram

Source: BMC public health; Oct 2017; vol. 17 (no. 1); p. 817

Publication Type(s): Journal Article

Available at BMC Public Health - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDDrug-resistant pulmonary tuberculosis (DR-TB) is a significant public health issue that considerably deters the ongoing TB control efforts in India. The purpose of this review was to investigate the prevalence of DR-TB and understand the regional variation in resistance pattern across India from 1995 to 2015, based on a large body of published epidemiological studies. **[ABSTRACT EDITED]**

Mycobacterium tuberculosis transmission from patients with drug-resistant compared to drug-susceptible TB: a systematic review and meta-analysis.

Author(s): Kodama, Chiori; Lange, Berit; Olaru, Ioana D; Khan, Palwasha; Lipman, Marc;

Source: The European respiratory journal; Oct 2017; vol. 50 (no. 4)

Publication Type(s): Letter

Exercise: Sensitivity and Specificity

Sensitivity:
If a person has a disease, how often will the test be positive (true positive rate)?

If the test is highly sensitive and the test result is negative you can be nearly certain that they don't have disease.

Specificity:
If a person does not have the disease how often will the test be negative (true negative rate)?

If the test result for a highly specific test is positive you can be nearly certain that they actually have the disease.

Quick Quiz:

1. **A very sensitive test, when negative, helps you:**
   a: Rule-in disease
   b: Rule-out disease
   c: Confuse medical students
   d: Save money

2. **A test which is highly specific, when positive, helps you:**
   a: Rule-in disease
   b: Rule-out disease
   c: Confuse medical students
   d: Save money

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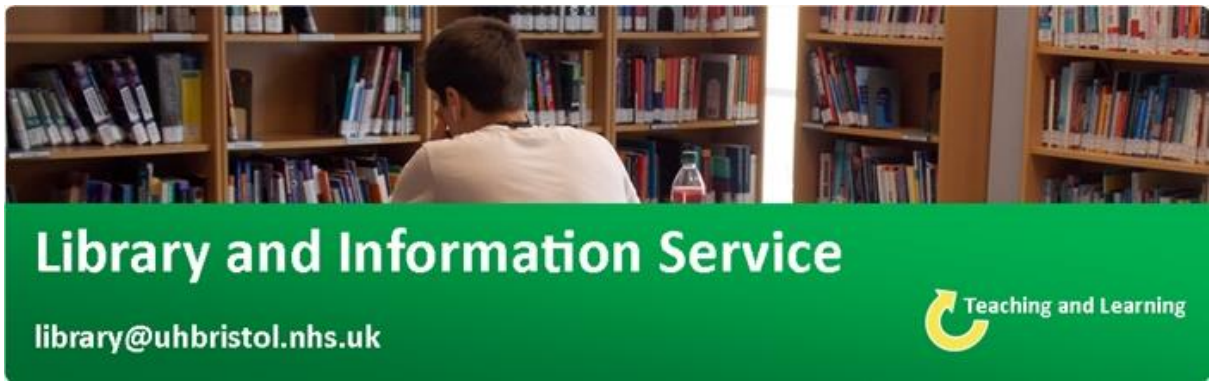

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