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ASTMH is an international society committed to equity and global impact through the treatment

# ABSTRACT BOOK

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but not limited to ethnicity, color, national origin, age, religion, socioeconomic status, disability, sexual orientation, gender, and gender identity or expression.

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assess the need for responsive vaccination strategies in outbreak scenarios. This is work in progress but will be completed by August/September 2019. In conclusion we will show difference between pre and post vaccination cases in high XDR epidemic areas.

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#### A LOOP MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) ASSAY FOR THE DETECTION OF *TREPONEMA PALLIDIUM*

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The eradication of yaws caused by *Treponema pallidum subsp. pertenue*, is constrained by the lack of rapid, accurate diagnosis. We sought to develop a molecular point-of-care test for the diagnosis of yaws. A Loop-mediated isothermal amplification (LAMP) assay with primers targeting the conserved gene, *tp0967*, with visual detection by lateral flow test strip was developed and optimized. The limit of detection was evaluated while 63 samples from clinical cases of yaws and 5 samples with PCR-confirmed syphilis were used to determine the sensitivity and specificity of the assay compared to the current molecular testing protocol. The developed LAMP assay was found to be optimal when run at 65°C for 30 minutes. The limit of detection was  $2.7 \times 10^4$  DNA copies/ml. The sensitivity of the LAMP assay using unextracted and DNA extracted samples were 0.67 and 1.00 respectively. None of the syphilis samples tested positive in any of the assays. In conclusion, we show the development of a fast and sensitive LAMP assay for yaws detected by lateral flow test strip. Using extracted DNA, the assay sensitivity is at par with gold standard detection. The assay can be adapted to minimal sample processing required for in-field detection without DNA extraction.

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#### RIFAMPIN-OFLOXACIN-MINOCYCLINE (ROM) FOR THE TREATMENT OF PAUCIBACILLARY LEPROSY: A SYSTEMATIC REVIEW

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Leprosy is a complex tropical infection from a diagnostic and management perspective, as patients with leprosy are at risk of numerous related complications from the disease itself and its treatment. Standard WHO multi-drug treatment (MDT) consists of medications that are potentially harmful and cause a range of adverse systemic effects. Monthly- or single dosing of ROM has emerged as a potential treatment option for leprosy, however, a synthesis of the evidence supporting ROM does not exist. Paucibacillary leprosy, characterized by limited skin lesions and a low bacillary load, may be most amenable to a fluoroquinolone-based treatment protocol. We performed a systematic review of relevant literature to evaluate the safety and efficacy of ROM-based treatment for paucibacillary leprosy. Various databases were searched from inception to March 2019, using a combination of search terms "leprosy", "rifampin", "ofloxacin", "minocycline", and "ROM", while also accounting for alternative disease and chemical identifiers. The systematic review will focus on assessing and reporting on the efficacy, and safety of monthly ROM in the treatment of paucibacillary leprosy within a human population. 1139 records were retrieved for title and abstract screening, however, after a multi-step de-duplication pipeline, 568 articles remained. Subsequent title screening yielded 288 studies that were eligible for final inclusion. Main outcome measures to be assessed are lesion clearance, treatment failure, relapse, side effects and reversal reactions. A cursory review of relevant abstracts suggests that important determinants of health in the treatment of leprosy are: social environments, patient education, health services, gender and income. Synthesizing the current evidence discussing the efficacy of monthly ROM, will strengthen the current body

of knowledge surrounding the treatment of paucibacillary leprosy, and may allow for the development of standardized fluoroquinolone-based treatment protocols.

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#### THE TREATMENT OF MULTIBACILLARY LEPROSY UTILIZING RIFAMPIN-OFLOXACIN-MINOCYCLINE (ROM): A SYSTEMATIC REVIEW

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From a diagnostic and management perspective, leprosy is a complex tropical infection. Patients who are affected by leprosy are at risk of several complications associated with the disease itself and its treatment. Standard WHO multi-drug treatment (MDT) is comprised of medications that are potentially harmful and can induce a variety of adverse systemic effects. Alternative options for potential treatment have emerged such as monthly dosing of Rifampin-Ofloxacin-Minocycline (ROM) combination therapy, however, there is limited synthesized evidence of efficacy. Multibacillary leprosy, characterized by numerous skin lesions and a high bacillary load, requires more prolonged daily treatment compared to paucibacillary disease. Monthly ROM-based protocols may enable reduced pill burden and translate to fewer adverse effects associated with the clofazimine and dapsone components of standard MDT, in particular. To assess the safety and efficacy of monthly ROM treatment and to determine how this may be affected by determinants of health, we conducted a systematic review of relevant literature. Various databases were searched from inception to March 2019, using a combination of search terms "leprosy", "rifampin", "ofloxacin", "minocycline", and "ROM", while also accounting for alternative disease and chemical identifiers. 1139 records were retrieved for title and abstract screening, after which 288 studies were eligible for final inclusion. Primary outcome measures to be evaluated are lesion clearance, treatment failure, relapse, side effects and reversal reactions. A perfunctory review of relevant abstracts proposes that the major determinants of health to be considered in the treatment of leprosy are: social environments, education level of the patient, access to health services, gender and income. By synthesizing the current evidence discussing the efficacy of monthly ROM in treating multibacillary leprosy, we will map the current body of knowledge that exists with the ultimate goal of enabling more simplified standardized treatment protocols.

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#### RISK FACTORS FOR BACTEREMIA IN SEVERELY MALNOURISHED UNDER-FIVE PNEUMONIC CHILDREN AND THEIR OUTCOME

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Bacteremia is quite common in severe acute malnourished (SAM) children with pneumonia, who often experience a fatal outcome, especially in developing countries. There is limited information in the medical literature on the risks of bacteremia in SAM children with pneumonia. We have examined the factors associated with bacteremia and their outcome in under-five children who were hospitalized for the management of pneumonia and SAM. In this unmatched case-control study, SAM children of either sex, aged 0-59 months, admitted to the Dhaka Hospital of the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) with cough or respiratory distress and radiological pneumonia during April 2011 to July 2012 were enrolled (n=405). Those with pneumonia as well as bacteremia constituted the cases (n=18), and randomly selected SAM children with pneumonia without bacteremia constituted controls