

in endemic locations for stings.

Children are at a higher risk of experiencing severe manifestations of scorpion envenomation. Antivenom is widely used in envenomed patients, although controversy exists as to when patients should receive it. Antivenin access varies across geographical regions, with a noted disparity between rural and urban centres. Prazosin is more effective than other supportive treatments, helping to alleviate cardiovascular manifestations.

Conclusions: Our analysis suggests that antivenom is effective in accelerating the recovery process and reducing mortality in moderate and severely envenomed patients. Synthesizing current evidence around therapeutic strategies for envenomation can inform the development of appropriate treatment and prevention protocols in non-endemic regions where clinicians lack familiarity with envenomation syndromes and appropriate therapeutics.

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Influence of Host Nutriome on Immunological Control of *Trypanosoma cruzi* Infection

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Background: Host nutritional status may impact humoral and cellular mechanisms, modulating the immunologic control of parasitic infections. Insufficient or surplus micronutrients can weaken the immune systems' function, resulting in poor immunologic control of protozoal infections.

Objectives: To further understand this, we intend to study the relationship between *Trypanosoma cruzi* infection and host micronutrient status. This will be done by analyzing how the immune response and defense mechanisms are impacted by nutrient deficiencies and perturbations in Chagas disease. The severity of Chagas disease is heavily influenced by the host's immune response to infection, while the current landscape of literature suggests that the host's nutritional status plays an integral role in this relationship.

Methods: Combinations of search terms from database inception to March 2022 were searched in five electronic databases. A total of 9,814 articles were retrieved; after deduplication 7,828 articles remained. Screening remains ongoing and has been performed independently by two reviewers with discrepancies arbitrated by a tertiary reviewer. Presently, 206 articles have been full-text screened, leaving 5 eligible for inclusion. A thorough bias assessment will be carried out using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach following screening.

Results: Interim findings suggest that poor micronutrient status is associated with greater Chagas disease severity. Deficiencies reported to impact Chagas disease clinically and parasitologically include vitamin D (n=2), selenium (n=2), vitamin A (n=1), vitamin E (n=1), magnesium (n=1), and omega-3 polyunsaturated fatty acids (n=1).

Conclusions: The data collected will be concisely reported to illustrate the findings of published literature regarding the various ways that the function of the immune system in people with Chagas disease alters and deteriorates due to nutrient deficiencies or irregular micronutrient status. This combined body of information will potentially improve the prognosis of patients with Chagas disease, by informing the development of possible adjunctive therapies include nutrient repletion.

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The Treatment of Multibacillary Leprosy Utilizing Rifampin-Ofloxacin-Minocycline (ROM): A Systematic Review

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Background: 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.

Objectives: 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 dapsona components of standard MDT, in particular.

Methods: To assess the safety and efficacy of monthly ROM treatment in a multibacillary population, 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 May 2022. 1,201 records were retrieved for screening however after a de- duplication process 625 articles remained. Thus far, 8 articles have been identified for ultimate inclusion, however screening remains ongoing.

Results: Interim findings suggest that treatment failure and side effect frequency is greater in the comparator group (+2.29% and +52% respectively), and that relapse is more frequent in the ROM group (+0.94%). This suggests that ROM may be comparable to gold standard therapeutics, however a more robust analysis is necessary. Additionally, major determinants of health to be considered include social environments, education level of the patient, access to health services, gender, and income.

Conclusions: 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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Rifampin-Ofloxacin-Minocycline (ROM) for the Treatment of Paucibacillary Leprosy: A Systematic Review

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Background: 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.

Objectives: Monthly- or single dosing of combined rifampicin, ofloxacin, and minocycline (ROM) has emerged as a potential treatment option for leprosy, however, a recent 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.

Methods: 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 May 2022, using a combination of search 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. 1,201 records were retrieved for title and abstract screening, however, after a multi-step de-duplication pipeline, 625 articles remained. Thus far, 28 articles have been identified for final inclusion, however screening remains ongoing.

Results: Interim findings suggest that patient lesion clearance and treatment failure is greater in the comparator group (+4.69% and +2% respectively), and that relapse, side effects, and reversal reactions are more frequent in the ROM group (+0.39%, +0.42%, and +8.15% respectively). This suggests that ROM may be slightly less efficacious than its comparator, however, a more robust analysis is necessary. Determinants of health identified in the treatment of leprosy include social environments, patient education, health services, gender, and income.

Conclusions: 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.