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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.

ASTMH is an international society committed to equity and global impact through the treatment and prevention of tropical infectious diseases. Our diverse membership comes from more than 115 countries... we are committed to the open

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the leishmanin skin test; microscopic identification of amastigotes from skin aspirates, biopsies and scrapings; culture; and molecular assays. We aim to determine optimal methods to accurately and efficiently diagnose TL to improve diagnostic stewardship. We searched five databases from inception to July 16, 2018 including Ovid MEDLINE, Embase, LILACS, Cochrane Library and Scopus with the following search terms: (“cut\* leish\*” OR “muc\* leish\*” OR “teg\* leish\*”) AND (diagnosis OR diagnostic accuracy OR sensitivity OR specificity OR stard OR test\*) AND NOT (viscer\*). All systematic reviews, diagnostic trials and observational studies were included. Titles, abstracts and full-texts are systematically screened by two reviewers with a tertiary arbitrator. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and Quality Assessment of Diagnostic Accuracy Studies (QUADAS) will be employed. 6745 papers were identified from the five databases and 1278 papers remained for abstract evaluation (3391 removed) after title screening, where non-human, non-TL, non-diagnostic and case report articles were excluded. Abstract and full-text screening will be conducted. Data will be extracted from full-texts and assessed using QUADAS for selection and information bias. Heterogeneity of the studies will be determined and meta-analysis performed as appropriate. TL cannot be distinguished from competing infectious etiologies clinically, thus necessitating confirmatory diagnostics. A knowledge synthesis of accurate diagnostic assays can provide insight into the optimal approach for TL confirmation and subsequently guide therapy.

1842

### ETHNOPHARMACEUTICALS FOR THE TREATMENT OF OLD WORLD CUTANEOUS LEISHMANIASIS: A SYSTEMATIC REVIEW OF TOPICAL APPLICATION OF TURMERIC

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Toxicity, expense, and accessibility limit treatment success in Old World Cutaneous Leishmaniasis (OWCL), a neglected parasitic disease caused by members of the genus *Leishmania* found in the Middle East, Mediterranean basin, Arabian Peninsula, Africa as well as the Indian Subcontinent. Better drugs are urgently needed, however, drug discovery is hindered by limited funding given geographic restriction of highly endemic OWCL to LMICs. Plant-based compounds with potential anti-leishmanial effects found in and around local endemic communities present an opportunity to overcome the aforementioned therapeutic challenges, and many such interventions are supported by anecdotal evidence of efficacy. We aim to synthesize existing evidence around available ethnopharmaceuticals to promote drug discovery for the prevention and treatment of OWCL. PubMed (NCBI), Medline (OVID), Embase (OVID), Web of Science (BioSIS) and LILACS (VHL) were searched for from inception to July 26, 2018 using combinations of the search terms “cutaneous leishmaniasis” and “ethnopharmaceuticals”. Iterative inclusion and exclusion of search terms was employed to maximize relevant article extraction. The GRADE approach will be used to assess quality of studies reporting therapeutic interventions. 3057 PubMed, 2818 Medline, 4200 Embase, 3183 Web of Science and 490 LILACS articles were retrieved for title and abstract screening; after duplicate removal, 5492 remained. 550 abstracts met inclusion criteria for full-text review, of which, 241 (43.80%) abstracts pertained to Old World species, and 113 (21%) were specific to *L. donovani*. Curcuma spp. “Turmeric” was identified in 4 articles (0.7%) to date. Synthesizing the current evidence surrounding ethnopharmaceuticals for the treatment of OWCL may contribute to drug discovery pipelines and potentially lead to novel therapeutics in a field that has not seen any new drug development for over half a century, especially in the context of turmeric.

1843

### ETHNOPHARMACEUTICALS FOR THE TREATMENT OF NEW WORLD CUTANEOUS LEISHMANIASIS: A SYSTEMATIC REVIEW OF TOPICAL APPLICATION OF PEPPER AND ALLIUM

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New World Cutaneous Leishmaniasis (NWCL) is a neglected parasitic disease caused by members of the genus *Leishmania* primarily identified in Central and South America. Better drugs are urgently needed given the toxicity, expense and accessibility limits of first-line treatment options. Plant-based compounds with potential anti-leishmanial effects found in and around local endemic communities, particularly in and around the Amazon basin, present an opportunity to overcome the aforementioned therapeutic challenges, and many such interventions are supported by anecdotal evidence of efficacy. We aim to synthesize existing evidence around available ethnopharmaceuticals to promote drug discovery for the prevention and treatment of NWCL. PubMed (NCBI), Medline (OVID), Embase (OVID), Web of Science (BioSIS) and LILACS (VHL) were searched for from inception to July 26, 2018 using combinations of the search terms “cutaneous leishmaniasis” and “ethnopharmaceuticals”. Iterative inclusion and exclusion of search terms was employed to maximize relevant article extraction. For the systematic review, we included molecular, mechanistic, and observational studies, case reports, case series, cohort studies, as well as clinical trials reporting therapeutic outcomes, if possible using the GRADE approach. A total of 13667 abstracts were retrieved, after which 7566 duplicates were removed. Of the remaining abstracts, 550 abstracts were included in the full text review, of which 176 (32%) abstracts highlighted New World species; 116 (66.0%), 33 (18.7%), and 27 (15.3%) abstracts pertained to *L. amazonensis*, members of *Viannia* subgenus, and other New World species, respectively. Of all the abstracts included in the full text review, 25 (4.5%) and 6 (1.1%) were identified for *Piper* spp. “Pepper” and *Allium* spp. “Garlic”, respectively. Synthesizing the current evidence surrounding ethnopharmaceuticals for the treatment of NWCL may contribute to drug discovery pipelines and potentially lead to novel therapeutics, particularly those targeting the *Viannia* complex, where patients often develop more severe clinical manifestations.

1844

### AN UPDATE ON THE ROLE OF WOUND CARE IN THE MANAGEMENT OF OLD WORLD CUTANEOUS LEISHMANIASIS

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Old world cutaneous leishmaniasis (OWCL) typically presents as one or several chronic, infiltrative lesions on exposed parts of the body, and is treated pharmacologically to accelerate cure, reduce scarring, and to prevent parasite dissemination or relapse. Limited data support the role of local wound care for the management of OWCL, though the scope of such benefit and to which patient populations wound care should be applied remains undetermined due to the absence of synthesized data on the subject. We aim to synthesize the literature around the role of wound care in the management of OWCL to inform treatment guidelines and evidence-based therapeutic strategies. Medline (Ovid), Embase (Ovid), and PubMed (NCBI) were searched from inception to February 2019 without language restriction using combinations of the search terms “leishmania\*” and “wound care”. The GRADE approach will be used to assess quality of studies reporting specific wound care interventions. 626 articles were identified with the initial search. After screening titles and

abstracts, 226 articles were selected for final review. 50 publications were specific for OWCL, 5 publications discussed wound care in both OWCL, and New World Cutaneous Leishmaniasis, and 58 publications were review articles. Study characteristics including number of participants, wound care strategy/ intervention (debridement and removal of crusts, occlusive dressings, cream/ointment containing silver, washing, topical antimicrobials), outcomes (cure, time to reepithelization, induration reduction, scar formation-quality and cosmesis, safety/tolereability, costs, feasibility/accessibility), study location, and species identification, will be extracted from all eligible studies and analyzed. We will systematically map the literature and synthesize the current state of knowledge and topical wound-oriented management practices in OWCL in order to inform optimal adjunctive clinical approaches and guidelines. We will also identify knowledge gaps and potential prospective research questions to fill them.

## 1845

### A SYSTEMATIC REVIEW OF WOUND CARE IN THE MANAGEMENT OF NEW WORLD CUTANEOUS LEISHMANIASIS

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## 1846

### PHENOTYPIC CHARACTERIZATION OF TRYPANOSOMES CELLS TREATED WITH TETRACYCLIC IRIDOID, ML F52 SUPPRESSION OF FLAGELLA ATTACHMENT PROTEINS

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Despite the recent advances in drug research, finding a safe, effective, and easy to use chemotherapy for Human African Trypanosomiasis (HAT) remains a challenging task. This condition underlines the urgent necessity for the development of new drugs for the treatment of HAT. We previously identified the anti-trypanosome activities of three novel tetracycliridoids; ML-2-3, Molucidin and ML-F52, isolated from *Morinda lucida* with IC<sub>50</sub> values of 3.75µM, 1.27µM and 0.43µM, respectively. Immunohistochemistry (IHC) study showed that the compounds significantly suppressed the expression of PFR-2, which proceeded to the events of cell cycle alteration and apoptosis induction. Scanning Electron Microscopy revealed the severe phenotype of the flagella detached from the body of the parasite. Here we present a phenotypic characterization of ML-F52 treated trypanosomes in detail with analyzing the expression levels of Flagellum Attachment Zone (FAZ) filament proteins, Coiled-coil 2-domain containing protein (CC2D) and Flagella Attachment Zone protein 1 (FAZ-1) by IHC and Western blot assays. Immunohistochemistry study showed that ML-F52 significantly suppressed the expression of CC2D after 12 hours of post treatment whilst FAZ-1 did not show any significant suppression. After 24 hours of post treatment, cell length and FAZ length decreased with the emergence of cell containing detached flagella as compared to the control. Also, ML-F52 caused multinucleated phenotype and an increase in number of cells with only one or no visible kinetoplast. Western blot assay showed that CC2D expression was reduced more than approximately 60% by 12 hours post treatment and approximately 80% by 24 hours post treatment. Our findings suggested that ML-F52 might significantly inhibit the development and function of the flagellum.

## 1847

### VISCERAL LEISHMANIASIS ELISA TESTING: EVALUATION OF SERIAL SERUM SAMPLES REVEALS AN UNANTICIPATED FINDING

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Serologic testing for visceral leishmaniasis (VL) includes ELISA and immunochromatographic testing (ICT) methods. Generally antibody responses are reported to wane with time. 200 Iraq-deployed, healthy US servicemembers were enrolled in an asymptomatic VL surveillance study 2015-17 and ELISA testing of current, pre and post deployment sera was conducted. Their prior banked samples were requested from the Department of Defense Serum Repository; timepoints included entry to military service (accession), before deployment and upon return from Iraq. Serologic testing included a soluble *Leishmania* antigen-based ELISA using 1:400 sera dilution with positive ELISA results confirmed using a *Leishmania* Western Blot (WB, LDBios, France). Additionally, post Iraq and enrollment sera were tested with rk39 ICT (Kalazar Detect, Inbios WA). Enrollment sera from seven subjects tested positive on ELISA (3.5%) with one WB confirmed; there were no reactive rk39 serologies. Post-deployment sera tested ELISA positive in 55 subjects (27.5%), 48%