

AB005. Diagnostic advances in tegumentary leishmaniasis: a scoping review from 2018 to 2023

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Background: Leishmaniasis is a vector-transmitted disease caused by leishmania protozoa in humans. It is manifested in three clinical forms: cutaneous and mucocutaneous, also known as tegumentary, and visceral leishmaniasis, associated with poverty. Social/environmental determinants and climate change are risk factors that influence endemicity. The low sensitivity of direct parasitological tests, considered the gold standard in some countries, restricts early diagnostic tools, causing delays in proper treatment. Improved testing methods are urgently needed to address these limitations.

Methods: A scoping review was performed using PubMed database from 2018 to June 2023, to identify new technologies related to human tegumentary leishmaniasis diagnosis. Keywords employed were leishmania, diagnosis, specificity, and sensitivity.

Results: Among the 87 articles found, 47 were deemed relevant and included in the study in three groups: direct parasitological, immunological, and molecular diagnostic methods. Data collected were about sensitivity, specificity, end of care, clinical manifestation, and causative species. Direct parasitological methods showed lower sensitivity than immunological methods, such as immunohistochemistry and enzyme-linked immunosorbent

assay (ELISA). On the other side, molecular techniques, like competitive polymerase chain reaction (cPCR), quantitative polymerase chain reaction (qPCR), loop-mediated isothermal amplification (LAMP), duplex polymerase chain reaction (duplex PCR), Palm polymerase chain reaction (Palm PCR), high resolution melting polymerase chain reaction (HRM PCR), Mini-polymerase chain reaction (Mini-PCR), flow-through polymerase chain reaction (FT-PCR), semi-nested polymerase chain reaction (semi-nested PCR), and recombinase polymerase amplification lateral flow (RPA-LF) showed higher sensitivity than direct parasitological methods. As diagnostics advances, is it worth considering the diagnostic confirmation of tegumentary leishmaniasis and its genotypification, combining the recollection of sample with cotton swabs followed by qPCR and sequencing, showing that the implementation of new diagnostic technology associated with the traditional methods in leishmaniasis endemic countries.

Conclusions: Urgent infrastructure improvements, along with the presence of adequately trained healthcare professionals, are critical in controlling this complex neglected disease. These measures play a partial, yet significant, role in effectively managing the condition.

Keywords: Leishmania; diagnosis; specificity; sensitivity

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Footnote

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