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**Cost-effectiveness of diagnostic-therapeutic strategies for pediatric visceral leishmaniasis in Morocco**

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Background and objectives

Visceral leishmaniasis (VL) is a neglected parasitic disease that is fatal if left untreated. VL is endemic in Morocco and other countries in North Africa were it mainly affects children from rural areas. In Morocco, the direct observation of Leishmania parasites in bone marrow aspirates is used to diagnose VL and Glucantime (SB) is the first line of treatment. In this study we evaluate the cost and cost-effectiveness of alternative diagnostic-therapeutic strategies for pediatric VL in Morocco. In particular we evaluate the use of liposomal amphotericin B (L-AmB), the safest and most effective anti-leishmanial drug.

Methods

A decision-analysis model was used to estimate the cost-effectiveness of using RDT and/or short course L-AmB to manage VL pediatric cases in Morocco compared to the current clinical practices. Incremental cost-effectiveness ratios (ICERs), expressed as cost per death averted, were estimated by comparing costs and effectiveness of the alternative algorithms with the current practices. Additionally, a threshold analysis was undertook to evaluate the cost-effectiveness of introducing both L-AmB regimens at different prices of the drug.

Results

This study shows that using RDT and/or implementing short course L-AmB treatments would be cost-effective in the Moroccan context according to the World Health Organization threshold: ICER less than three 3 times the gross domestic product (GDP) per capita. In particular, if L-AmB is purchased at a preferential price (18 US$ per vial) the use of this drug to treat pediatric VL cases would be less expensive than SB.

Conclusions

The results of this study should encourage the implementation of RDT and/or short course L-AmB treatments for pediatric VL in Morocco and other countries in North Africa facing the same challenges, while governments and international organisations should advocate for a negotiated reduction of L-AmB price for establishing the drug as first-line treatment of VL in children.