Alternative therapies for Mexican Leishmania.

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Abstract. (mandatory)

Due to the high rate of resistance and the frequent relapse after treatment, Mexican Leishmania, the causative agent of cutaneous leishmaniasis in countries such as Mexico and Central America, constitutes a health problem and the search for new therapies is necessary. Hydroxyurea, a cancer drug, has been shown to be effective in stopping the main cell cycle of Leishmania. Martínez-Rojano H and collaborators carried out a study where said drug was tested in an in vitro model of infection in macrophages. Meglumine antimony, standard pharmacological treatment for Leishmania mexicana, was used as a reference under the same experimental conditions. The hydroxyurea completely eliminated the Leishmania parasites when used at a dose of 10 or 100 microg / ml, with a difference in the duration of treatment of 9 and 3 days respectively. More recent studies have shown that 2 and 3-hydroxypyridine hydroxyalkyl and acyloxyalkyl derivatives show inhibitory activity against the growth of Mexican Leishmania. García Liñares G and collaborators obtained thirty new compounds by means of a chemoenzymatic methodology in two reaction stages. The influence of parameters such as enzyme source, acylating agent / substrate ratio, enzyme / substrate ratio, solvent and temperature on the enzymatic reaction was evaluated. Acetylated derivatives showed greater efficacy in inhibiting the growth of Mexican Leishmania. On the other hand, Mendoza-Martínez C synthesized a series of quinazoline-2,4,6-triamine and evaluated it in vitro against Leishmania mexicana. N (6) - (Ferrocenmethyl) quinazolin-2,4,6-triamine (H2) showed activity in intracellular promastigotes and amastigotes, in addition to low cytotoxicity in mammalian cells. The study showed the importance of the ferrocene nucleus and the heterocyclic nucleus for the observed activity, in addition to indicating that the mechanism of action involves redox reactions due to the easy oxidation of H2.

KEYWORDS: Leishmania mexicana, hydroxyurea, acetylated derivatives, quinazoline-2,4,6-triamine.

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