ADVANCEMENTS IN EFFICACY TESTING OF TOPICAL NYSTATIN FOR TREATING *Leishmania (L.) amazonensis* INFECTIONS IN MICE

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Leishmaniasis is recognized by the World Health Organization as a neglected tropical disease. Given the challenges associated with its treatment, there is a pressing need for studies exploring new therapeutic options that offer improved efficacy and lower toxicity for patients. This study presents an *in vivo* efficacy evaluation of topical antifungal Nystatin cream (125 IU/mouse) as combination therapy with meglumine antimoniate in the BALB/c–*Leishmania (L.) amazonensis* infection model. The analyses included assessments of size lesion progression, parasite load in paw lesion, and parasite load in the draining lymph node. A significant reduction in paw lesion was observed in all treated groups compared to controls (untreated, placebo cream and treated with PBS) (p=<0,0001). Furthermore, parasite load in paw infection showed a significant reduction in the groups treated with Nystatin monotherapy compared to controls (p=0,0007). Similarly, parasite load in the lymph nodes demonstrated a significant reduction in the treated groups compared to controls (p= 0,001). The combined findings from this study suggest that Nystatin administrated topically has potential as a repositioned drug for the treatment of cutaneous leishmaniasis. These results indicate that Nystatin cream when combined with meglumine antimoniate could progress along the Technology Readiness Level continuum and is currently positioned at the preclinical mice study phase.

Keywords: *Repurposing, Nystatin, Combination therapy, Cutaneous Leishmaniasis.*

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