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IMPACT OF *IN VIVO L. BRAZILIENSIS* INFECTION ON BONE MARROW-DERIVED MACROPHAGES (BMMΦ) MIGRATION

LUZ, Y.D.S.[1]; SOUZA. I. R [1,2]; VALADARES. L.A. [1,3]; BERNARDES, C.P.O.S. [1]; VERAS, P. [1]; DOS SANTOS, W.L.C. [1]; FULLAM, J.P.B.D.M. [1].

[1].INSTITUTO GONÇALO MONIZ, FUNDAÇÃO OSWALDO CRUZ (FIOCRUZ), SALVADOR- BA- BRA2. [2]ESCOLA BAHIANA DE MEDICINA E SAÚDE PÚBLICA (EBMSP), SALVADOR- BA- BRA. [3]UNIVERSIDADE FEDERAL DA BAHIA (UFBA), SALVADOR- BA- BRA

The Dissemination of *Leishmania*-infected cells is crucial for the establishment of the disease. However, the mechanisms driving cell migration post-infection remain underexplored. Studies on different *Leishmania* species have shown that macrophage migration is reduced following infection, a process linked to decreased adhesion complex formation and altered actin dynamics. Despite these findings, the impact of *Leishmania* infection on bone marrow cell recruitment *in vivo* remains poorly understood. This study investigates the migration of bone marrow-derived macrophages (BMMΦ) infected *in vivo* with *L. braziliensis*. Mice were either infected with *L. braziliensis*, and BMMΦ were isolated at 2, 5, and 10 weeks post-infection. These BMMΦ underwent directional migration assays using a transwell system with the chemoattractant MCP-1. Adhesion complex formation was assessed through immunostaining for phosphorylated focal adhesion kinase (p-FAK) and paxillin (p-Paxillin), alongside actin cytoskeleton analysis using markers such as phalloidin, Cdc42, RhoA, and Rac1. Immunofluorescence was analyzed via confocal microscopy. Results showed a significant reduction in BMMΦ migration at all post-infection time points. This reduction was associated with decreased p-FAK and p-Paxillin expression, both essential proteins for adhesion complex formation. Infected BMMΦ also exhibited altered actin dynamics, with increased Rac1 and Cdc42 expression at 2 and 5 weeks, along with decreased RhoA expression, indicating reduced actin cytoskeleton contraction. Understanding how *Leishmania* infection affects bone marrow cell recruitment *in vivo* is essential for elucidating the pathogenesis of cutaneous leishmaniasis. Further research on the bone marrow changes induced by *L. braziliensis* infection and their role in modulating BMMΦ migration is crucial. These insights could contribute to the development of new therapeutic strategies and preventive measures against severe leishmaniasis.

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