Effect of daily injection of morphine on leishmaniose infection in mice

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Abstract

Background: The aim of this study was to evaluate the effect of chronic injection of morphine on infection with Leishmania major (L. major) in sensitive BALB/c and resistant C57BL/6 mice.

Methods: Morphine injections (2 times /day with 12 hrs intervals, S.c) were begun one week before parasite inoculation. The first group of mice strains was infused with 1.5mg/kg morphine, the second group with 15 mg/kg, and the control received normal saline. After appearance of local reaction on the site of parasite inoculation, the thickness of inoculated paw and countercurrent paw were measured. At the end, all mice were killed and their spleens and popliteal lymph nodes cells were cultured in the presence of Concanavalin-A, and the level of IL-4 was measured.

Results: In C57BL/6, mice local reaction size increased until 5th week and then began to decrease to reach a normal situation. In contrast, in BALB/c mice local reaction continued to increase up to the end of the test, and in some cases led to necrosis. There were no significant differences in local reaction size between tests and controls animals in both strains. In addition, there was not a significant difference at the level of IL-4 in the supernatant between tests and control groups in both two strains.

Conclusion: Chronic injection of morphine didn't have a significant effect on resistance of C57BL/6 and sensitivity of BALB/c mice to infection with L. major, that may result from immune system tolerance to affect of morphine.

Keywords: morphine, leishmaniose, chronic injection, BALB/c mice, C57BL/6 mice

References


