

实验研究

苦参碱和阿苯达唑联合治疗小鼠泡球蚴病的机制探讨

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摘要

目的 探讨泡球蚴病小鼠经苦参碱 (matrine, Mat) 阿苯达唑 (albendazole, ABZ) 及两药 联用治疗后机体的免疫应答状态和小鼠肝酶代谢的变化。方法 泡球蚴病小鼠 (AE小鼠) 经Mat、ABZ及其联合用药治疗60 d后, 检测小鼠血清中白细胞介素-2 (IL-2)、IL-4、IL-6、肿瘤坏死因子- α (TNF- α) 及肝组织匀浆中NO、一氧化氮合酶 (NOS)、诱导型一氧化氮合酶 (iNOS)、乳酸 (LD)、乳酸脱氢酶 (LDH)、钠钾ATP酶和钙镁ATP酶的含量及活性。结果 药物治疗组血清中IL-2、IL-4和TNF- α 的含量较感染对照组降低 ($P < 0.05$), IL-2的含量高于感染对照组 ($P < 0.05$), 其中联合用药组IL-4和TNF- α 下降较感染对照组明显 ($P < 0.05$); 各用药组肝组织LDH、NO、NOS和iNOS均较感染对照组明显下降 ($P < 0.05$), iNOS在Mat组及联合用药组下降幅度明显大于ABZ组 ($P < 0.05$), LD仅在联合用药组下降 ($P < 0.05$); 各用药组钠钾ATP酶和钙镁ATP酶较之对照组升高 ($P < 0.05$), 且Mat组及联合用药组钙镁ATP酶与ABZ组差异有统计学意义 ($P < 0.05$)。结论 AE小鼠经治疗后, Th1型细胞因子分泌增加, Th2型细胞因子分泌减少, 说明Mat能提高小鼠机体的免疫力, 并能显著改善小鼠肝功能, 这可能与Mat作用钙离子通道和逆转耐药性有关。

关键词 [泡球蚴病](#) [苦参碱](#) [阿苯达唑](#) [细胞因子](#) [比色法](#)

分类号

An Approach to the Mechanism of Matrine and Albendazole Against Echinococcus multilocularis Infection in Mice

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Abstract

Objective To assess the immune status and metabolic reaction of hepatic enzymes on mice with alveolar echinococcosis (AE) after treatment with matrine (Mat) and albendazole (ABZ). Methods Mice with AE were treated with single dose Mat, ABZ and combined Mat and ABZ respectively for 60 days. The serum level of IL-2, IL-4, IL-6 and TNF- α was detected before and after treatment. NO, LD content and LDH, NOS, iNOS, Na⁺-K⁺ ATPase, Ca²⁺-Mg²⁺ ATPase activities in hepatic tissue homogenate from the mice were measured by chromatometry. Results The level of IL-4, IL-6 and TNF- α decreased in the treated groups than infected control ($P < 0.05$), and especially that of IL-4 and TNF- α in the drug-combination group. While the level of IL-2 increased in the combination group than the infected control ($P < 0.05$). The content of NO and the activity of NOS and iNOS in hepatic tissue decreased after treatment than control ($P < 0.05$). iNOS in Mat and combination groups decreased more significantly than that of ABZ group ($P < 0.05$). The LDH activity also decreased after treatment ($P < 0.05$), however, the decrease of LD occurred only in the combination group ($P < 0.05$). The activity of Na⁺-K⁺ ATPase and Ca²⁺-Mg²⁺ ATPase increased in the treated groups ($P < 0.05$) with more considerable increase of Ca²⁺-Mg²⁺ ATPase in Mat and combination groups than the ABZ group ($P < 0.05$). Conclusion Matrine may strengthen the immunity of the mice and shows an inhibitory effect on the growth of Echinococcus multilocularis in vitro and in vivo, which is possibly related to the intervention of calcium ion passages and reversion of the multi-drug resistance.

Key words [Echinococcus multilocularis](#) [Matrine](#) [Albendazole](#) [Cytokine](#) [Chromatometry](#)

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