

**Combined treatment with interleukin-12 and  
mebendazole lessened experimental  
eosinophilic meningitis caused by  
Angiostrongylus cantonensis in ICR mice**

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摘要

**Abstract**

Angiostrongylus cantonensis is the major cause of eosinophilic meningoencephalitis cases in Taiwan. Mice were orally infected with 35 infective larvae. One group of mice were given a single dose of mebendazole (20 mg/kg of body weight) per os at various times and examined at 14 days postinfection (dpi) for worm recovery rate and pathological studies. A 94 to 97% reduction in worm recovery was observed when medication was given at 4 to 5 dpi. Sections of the brains revealed that untreated infected mice developed typical severe eosinophilic meningoencephalitis. Meninges of these mice were thickened by massive infiltration of eosinophils, whereas only moderate pathological change was observed in the brains of mice that were treated with mebendazole at 4 dpi. Infected mice that received daily injections of 10 ng of interleukin-12 (IL-12) only for various numbers of days also exhibited moderate pathological changes in the brain. Eosinophil infiltration in the brains of these mice was low, and severe mechanical injuries in the parenchyma were observed. Treatment with mebendazole in combination with IL-12, however, resulted in low levels of worm recovery and dramatic lessening of the eosinophilic meningitis. A reverse transcriptase PCR assay of mRNA expression in the brain also revealed that the use of IL-12 had shifted the immune response of the mouse from Th2 type to Th1 type. This study could be used in developing strategies for the treatment of human angiostrongylosis.