

عنوان مقاله:

Thymol has beneficial effects on the experimental model of ulcerative colitis

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خلاصه مقاله:

Objective: Thymol, a natural aromatic monoterpene phenol derived from thymus, possesses anti-inflammatory benefits. Here, we evaluated the potential of thymol therapy in improving an animal model of ulcerative colitis. Materials and Methods: Luminal instillation of acetic acid was used to induce colitis in male Wistar rats. Treatment groups daily received prednisolone (2 mg/kg, orally) or thymol (100 mg/kg, orally) for 10 consecutive days. Then, the rats were euthanized and tissue specimens were collected for evaluation of cyclooxygenase-2 (COX-2) expression by immunohistochemistry. Furthermore, the levels of total protein, nitric oxide, myeloperoxidase, malondialdehyde, IL-1, IL-6, and TNF- α were monitored in colonic homogenates. Eventually, the relative mRNA expression of I κ B α and NF- κ Bp65 was investigated using reverse-transcriptase PCR (RT-PCR) in colonic homogenates. Results: Both medications could reduce the mortality rate and the clinical scores of ulcerative colitis. The COX-2 expression was significantly reduced in the colons of thymol-treated animals compared to the prednisolone group. Also, the myeloperoxidase activity, nitric oxide level and malondialdehyde intensity were decreased in the colons of thymol-treated animals to a greater extent compared to the prednisolone group. Moreover, the total protein content of guts showed significant increases in the guts of thymol-treated animals in comparison to the prednisolone group. Nonetheless, thymol significantly reduced the levels of IL-6, and IL-1 compared to prednisolone. Both medications caused a significant decrease in the mRNA level of NF- κ Bp65, though the mRNA level of I κ B α did not show significant changes between the groups. Conclusion: Thymol may be a promising agent to ameliorate ulcerative colitis.

کلمات کلیدی:

Thymol, Acetic-acid, Ulcerative colitis, Wistar rat

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