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Atorvastatin attenuates TNBS-induced rat colitis: The involvement of the TLR4/NF- κ B signaling pathway

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The aim of the present study is to explore whether Atorvastatin improves intestinal inflammation through the inhibition of the TLR4/NF κ B signaling pathway in TNBS induced rat colitis. Acute colitis was induced by intra-rectal administration of 100 mg/kg TNBS dissolved in 0.25 ml of 50% ethanol. 24 hours after colitis induction, saline, Atorvastatin (20 and 40 mg/kg) and Sulfasalazine (100 mg/kg) were given to the animals by oral route. This was repeated daily for 1 week. Body weight changes, macroscopic and microscopic lesions were assessed. MPO and TNF- α activities were detected by immunohistochemistry (IHC) and the expression level of TLR4, MyD88 and NF- κ B p65 proteins were measured by western blotting analysis. Atorvastatin and Sulfasalazine reduced the body weight loss, macroscopic and microscopic lesions. Additionally, both drugs decreased the expression of MPO and TNF- α positive cells in the colon tissue. Furthermore, they inhibited the TNBS-induced expression of TLR4, MyD88 and NF- κ B p65 proteins. It is suggested that the anti-inflammatory effect of atorvastatin on TNBS-induced rat colitis may involve the inhibition of the TLR4/NF κ B signaling pathway.

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