Antinociception and anti-inflammation induced by simvastatin in algesiometric assays in mice

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Statins, belonging to a well-known drug class used for lowering cholesterol through competitive inhibition of 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase, also have other pleiotropic properties, such as anti-inflammatory action. The purpose of this study was to evaluate the antinociceptive and anti-inflammatory effects of simvastatin in five models of nociceptive behaviour. Oral gavage administration of simvastatin induced a dose-dependent inhibition of nociception for 1day in the acetic acid writhing (ED 50=5.59±0.07), tail-flick (ED 50=112.96±8.00), hot-plate (ED 50= 134.87±2.20), formalin hind paw (ED 50=19.86±1.12 in phase I and 23.30±2.05 in phase II) and orofacial formalin (ED 50=5.54±2.74 in phase I and 11.48±1.88 in phase II) tests. However, after 3days, the values were in the acetic acid writhing (ED 50=6.14±0.51), tail-flick (ED 50=154±8.88), hot-plate (ED 50=136.14±2.94), formalin hind paw (ED 50=15.93±0.42 in phase I and 17.10±1.80 in phase II) and orofacial f