Abstract

Cariniana rubra Miers (Lecythidaceae), popularly known as "jequitibá-vermelho", is a large Brazilian tree whose bark is used in infusion and decoction for the treatment of inflammatory conditions. This study aims to assess the anti-inflammatory, antinociceptive, and antipyretic effects of Cariniana rubra methanolic stem bark extract (EMCr) using experimental animals. Anti-inflammatory activity of EMCr was tested on carrageenan and dextran-induced rat paw edema, carrageenan-induced pleurisy in rats and acetic acid-increase vascular permeability in mice. Antinociceptive and antipyretic activities were evaluated using acetic acid-induced writhing, formalin and hot-plate tests in mice, as well as brewer's yeast-induced pyrexia in rats. The extract inhibited carrageenan and dextran-induced edema, reduced exudate volume and leukocyte migration on the carrageenan-induced pleurisy and on the vascular permeability increase induced by acetic acid. The EMCr inhibited nociception on the acetic acid-induced writhing and in the second phase of formalin test, and decreased rectal temperature. It was, however, inactive against thermal nociception. Phytochemical analysis with EMCr showed the occurrence of saponins, triterpenes, sterols and phenolic compounds. Phytosterols (β-sitosterol, stigmasterol), pentacyclic triterpenes (β- and α-amyrin as a mixture), arjunolic acid, a phytosterol glycoside (sitosterol 3-O-β-D-glucopyranoside), and triterpenoid saponins (28-α-glucopyranosyl-23-O-acetyl arjunolic acid; 3-O-α-glucopyranosyl arjunolic acid and 28-O-[α-L-Rhamnopyranosyl-(1¿2)-α-D-glucopyranosyl]-23- O-acetyl arjunolic acid) were the main identified compounds. It can be presumed that EMCr caused their effects by inhibiting the liberation and/or action of different inflammatory mediators. These findings support the traditional use of Cariniana rubra preparations to treat inflammation.

Keywords

Anti-inflammatory, antinociceptive, antipyretic, Cariniana rubra, Lecythidaceae, triterpenoidal saponins.