



Anti-inflammatory and anti-nociceptive effects of some 2-(2-(2-fluoro phenoxy)-4-cholorophenyl)-N aryline acetohydrazide derivatives

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Background and Aims: Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used as anti-inflammatory and anti-nociceptive tools. NSAIDs effects are created through cyclooxygenase (COX) inhibition and decreased synthesis of prostaglandin. Investigations on these agents are still carried out in order to achieve more effective compounds with fewer side effects. This study was started up to screen new type of 2-(2-(2-fluoro phenoxy)-4-cholorophenyl)-N aryline acetohydrazide for its evaluation as anti-inflammatory and anti-nociceptive agents.

Methods: The anti-inflammatory activity was determined using the carrageenan-induced rat paw edema by subcutaneous injection of 0.1 mL of 1% (w/v) carrageenan in saline into their footpads 1 h after IP (intraperitoneal) administration of compounds. Anti-inflammatory activity after 0.5, 1, 2, 3, 4 hours was measured. the edema was calculated as the thickness variation between thickness of paw before and after carageenan injection. The anti-nociceptive activity of all compounds was determined in vivo by acetic-acid-induced abdominal constriction test (writhing test) in mice. An aqueous acetic acid solution (1%; 0.1 ml/10 g) was administered IP 30 minutes after administration of the compounds. The number of writhes was counted for 30 minutes after acetic acid injection.

Results: An anti-inflammatory activity with significant reduction of rat paw edema in comparison with diclofenac as the reference drug was exhibited by most compounds. In addition, some significant anti-nociceptive effects as well as anti-inflammatory activity were observed in this study.

Conclusions: Significant anti-inflammatory and anti-nociceptive effects were shown by various substituted Aryline Acetohydrazide derivatives through inhibition of COX enzyme.

Keywords: Anti-inflammatory; Anti-nociceptive; Carrageenan test; Writhing test