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The study of the anti-inflammatory activity of Eforan

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Abstract

Searching for new effective and low-toxic antiphlogistics among the new classes of compounds that could have a selective and prolonged effect and minimum side effects is highly relevant. In this respect, the promising compounds are di- and monophosphonic compounds, which representative is a drug Dimephosphon. Objective of our study was to investigate the influence of Eforan, a new phosphonate, on various models of experimental inflammation, as well as on the development of edema caused by various mediators and modulators of inflammation. In the experiments on rats, Eforan reduced dose-dependently the intensity of the inflammatory reaction caused by carrageenan. The duration of anti-inflammatory action of Eforan was up to 24 hours of observation. Eforan effect on the carrageenan model of inflammation was comparable in the strength of anti-inflammatory effect with acetylsalicylic acid, and differed in longer duration of action. The anti-inflammatory effect of Eforan was demonstrated on the model of chronic autoimmune diseases - adjuvant arthritis. Both anti-histamine and anti-serotonin effects of the drug, as well as the absence of antagonism with bradykinin were established. The paper discusses the originality of the mechanism of anti-inflammatory action of phosphonates that show no gastrotoxicity unlike the traditional NSAIDs. It can be assumed that the anti-inflammatory effect of phosphonates, including Eforan, exemplified in cyclooxygenase-2 (COG-2) dependent inflammation models, is associated with the selective inhibition of COG-2.

Keywords

Arthritis, Bradykinin, Carrageenan, Eforan, Freund's adjuvant, Histamine, Inflammation, Non-steroidal anti-inflammatory drugs, Phosphonates