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Original Article

EFFECT OF 21-AMINOSTEROID U-74389G ON MARKERS FOR PNEUMOTOXICITY IN RAT BRONCHOALVEOLAR LAVAGE FLUID AFTER INTRATRACHEAL AMIODARONE ADMINISTRATION

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Summary

The protective effect of 21-aminosteroid U-74389 G on amiodarone-induced pneumotoxicity in rats was studied. Previous *in vitro* and *in vivo* studies have proven the remarkable antioxidative and membrane stabilizing potency of U-74389 G. The study was carried out on 72 male Wistar rats, divided into four groups: (1) - control; (2) - treated intratracheally (i.t.) with amiodarone (AM); (3) - treated with AM and U-74389G; (4) - treated with U-74389G. AM was installed i.t. on days 0 and 2 (6.25 mg/kg with a 3.125 mg/ml water solution). U-74389G was injected on day 0 and 2 at a daily dose 15 mg/kg. The activity of lactate dehydrogenase (LDH), acid phosphatase (AcPh), alkaline phosphatase (AlPh), total protein content and cytological assays of bronchoalveolar lavage fluid (BALF) were performed on days 3, 7 and 28. AM treatment resulted in significantly increased lung weight coefficient, protein content, total cell count, polymorphonuclear cells, alveolar macrophages, and activity of LDH, AcPh and AlPh. The treatment with AD and U-74389G attenuated the markers of pulmonary inflammation and damage of the alveolar-capillary barrier (lung weight coefficient, protein content, total cell count, polymorphonuclear cells, alveolar macrophages) compared to AM group. The results obtained from our study showed that U-74389G reduced early AM-induced lung inflammatory injury.

Keywords: 21-aminosteroid U-74389 G, amiodarone-induced pneumotoxicity, bronchoalveolar lavage fluid

Introduction

A family of steroid compounds, 21-aminosteroids, or lazaroids, was developed by modification of the structure of methylprednisolone. Although this family derived from glucocorticoids, it lacks glucocorticoid and mineralocorticoid activities [1]. Lazaroids are potent inhibitors of oxygen free radical-induced, iron-catalyzed lipid peroxidation [2]. They possess multiple antioxidant properties: *scavenging lipid peroxyl; decreasing formation or scavenging of hydroxyl radicals; reducing lipid peroxidation-induced arachidonic acid release; maintaining the level of endogenous tocopherol, and membrane stabilization by decreasing membrane fluidity* [3]. Lazaroids have been proved to have

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