Role of adrenal gland hormones in antiinflammatory effect of calcium channel blockers

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Abstract:
Effects of amlopidine, lodipine and nicardipine on acute phase of inflammation in the carrageenan model in intact rats were investigated in this study. In addition, the most effective dose of nicardipine that had the highest anti-inflammatory impact was investigated in carrageenan test in adrenalectomized rats. The effective dose of nicardipine was tested in the chronic phase of inflammation in the model of cotton pellet granuloma, and its efficiency was compared with diclofenac sodium. Amlopidine at 5 and 10 mg/kg doses showed 61%, 80%, lodipine 7.3%, 3.4% and nicardipine 38%, 37% inhibition of carrageenan-induced inflammation, respectively. Nicardipine (10 mg/kg) and diclofenac sodium (25 mg/kg) showed 11.6% and 16.2% inhibition, respectively against carrageenan-induced edema. Diclofenac at 10 mg/kg showed 4.3% inhibition of the inflammation. In cotton pellet test, antiproliferative effects of nicardipine (10 mg/kg) and diclofenac sodium (10 mg/kg) were evaluated as 60% and 39.5%, respectively. The obtained results showed that calcium channel blockers and diclofenac sodium significantly blocked acute and chronic phases of inflammation in intact rats, but in adrenalectomized rats calcium channel blockers and diclofenac sodium had no significant antiinflammatory effect.

Key words:
Ca channel blockers, carrageenan, inflammation, adrenal glands, adrenalectomy