Anti-inflammatory effects of carboxyamidotriazole on carrageenan-induced acute inflammation

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OBJECTIVE: To investigate the therapeutical effects of carboxyamidotriazole (CAI) in a rat model of carrageenan-induced paw acute inflammation and its mechanisms. **METHODS:** Wistar rats were randomly divided into normal group, two vehicle groups (Polyethylene glycol 400 control and normal sodium control group), CAI-treated groups (10, 20, 30 mg/kg) and positive control dexamethasone group (0.8 mg/kg). After the drugs were administered for 3 days, the paw acute inflammation was induced by carrageenan except normal group. The paw swelling was measured using a plethysmometer. Myeloperoxidase (MPO) activity and nitric oxide (NO) content were determined by spectrophotometric method, and the contents of PGE₂, TNF- α , IL-1 β , IL-10 and cytokine-induced neutrophil chemoattractant 1 (CNCI-1) were measured by ELISA. The inducible nitric oxide synthase (iNOS) expression was detected by Western blot method. **RESULTS:** The treatment of CAI inhibited the carrageenan-induced paw swelling. Meanwhile, CAI decreased the up-regulated MPO, NO, PGE₂, TNF- α , IL-1 β , and CNCI-1 in the inflamed paw tissue, and increased IL-10 levels. CAI also reduced the protein expression of iNOS. **CONCLUSION:** CAI has remarkable inhibitory effects on carrageenan-induced paw acute inflammation in the rats, and its mechanisms may be related to decreasing the inflammatory mediators and reducing the neutrophils infiltration.