

## Effects of coenzyme Q10 and vitamin C on the indomethacin–induced gastric ulcer in rat: A controlled experimental study

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**Background and Aims:** Oxidative stress is an important factor underlying in a variety of diseases . CoenzymeQ10 (CoQ10) , acts as free radical scavenger and protects against oxidative damage to the tissues . The aim of this study was the evaluation of the protective effects of CoQ10 and vitamin C against indomethacin –induced gastric ulcer .

**Methods:**The rats were divided into 5 groups of 6 animals each.In the first group, the animals received indomethacin ( 50 mg/kg , intraperitoneal)at 10 AM,plus soybean oil ( as vehicle )at 11 AM, animals in the second group received indomethacin at 10 AM, plus coenzyme Q10 ( 100mg /kg by gavage ) at 11 AM.In the third group ,the animals received indomethacin at 10 AM plus vitamin C (350 mg /kg by gavage ) at 11 AM , groups 4 and 5 were pretreated orally with CoQ10 and vitamin C , 1h before indomethacin,respectively.The protective effects were determined by evaluating the gastric damage , SOD activity and ulcer index . All animals in these groups were euthanized 4 hours after the last treatment , then 2 ml blood of heart ventricle and also the stomach were collected for calculation of SOD activity and ulcer index .

**Results:** Indomethacin induced gastric ulcer and decreased SOD activity depend on the generation of free radicals . Vitamin C , as a known antioxidant , decreased the gastric damage and increased the SOD activity. CoQ10 had similar effect meaning that it decreased the gastric damage and increased the activity of SOD.

**Conclusions:** These results suggest that (1)CoQ10 protects against indomethacin –induced gastric ulcer and inhibits the decrease in SOD activity by increasing antioxidant defenses and( 2)may be an useful drug both to prevent and treatment of indomethacin-induced gastric damage.

**Keywords:** CoQ10; Indomethacin; Vitamin C; Gastric ulcer