

Effects of ginsenoside Rb1 on the oxidative stress in the skeletal muscles of rats with postoperative fatigue syndrome.

Tan SJ, Yu Z, Dong QT.

Abstract

OBJECTIVE:

To observe the effects of ginsenoside Rb1 (GRb1) on the oxidative stress in the skeletal muscles of rats with postoperative fatigue syndrome (POFS) and to study its anti-fatigue mechanisms.

METHODS:

The POFS model was established using resection of 70% of mid-small intestine. Ninety-six Sprague-Dawley (SD) rats were screened using grasping test. The rats were randomly divided into the control group, the model group, and the GRb1 treated group (at 10 mg/kg) by the body weight. The maximum grip strength of rats was detected on the 1st, 3rd, 7th, and 10th day after operation, respectively. The contents of malondialdehyde (MDA), the activities of superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSH-PX) were detected.

RESULTS:

Compared with the model group, the maximum grip strength was obviously enhanced on the postoperative day 7 and 10 ($P < 0.05$), the MDA content obviously decreased on the postoperative day 3 and 7 ($P < 0.05$), the SOD activity obviously increased in the GRb1 treated group ($P < 0.05$). There was no obvious change in the activities of CAT and GSH-PX among the three groups at each time point ($P > 0.05$).

CONCLUSION:

GRb1 could reduce the oxidative stress injury in the skeletal muscles, improve the activities of antioxidant enzymes, and enhance the functions of the skeletal muscles in POFS rats, which may be important reasons for fighting against POFS.