عنوان مقاله:

Antioxidant properties of repaglinide and its protections against cyclosporine A-induced renal tubular injury

محل انتشار:

مجله علوم پایه پزشکی ایران, دوره 19, شماره 7 (سال: 1395)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Dao Li - *Department of Pharmacology, City College, Wuhan University of Science and Technology, Wuhan, China*

Jin Li - *Department of Laboratory, Zhongnan Hospital of Wuhan University, Wuhan, China*

Hui Li - *Department of Pharmacology, City College, Wuhan University of Science and Technology, Wuhan, China*

Qiong Wu - *Department of Pharmacology, City College, Wuhan University of Science and Technology, Wuhan, China*

Qi-Xiong Li - *Department of Pharmacology, City College, Wuhan University of Science and Technology, Wuhan, China*

خلاصه مقاله:

Objective(s): Repaglinide (RG) is an antihyperglycemic agent used for the treatment of non-insulin-dependent diabetes mellitus. It has a good safety and efficacy profile in diabetic patients with complications in renal impairment and is an appropriate treatment choice, even for individuals with more severe degrees of renal malfunctions. The aim of the present study was to examine the protective effect of RG on cyclosporine A (CsA)-induced rat renal impairment and to evaluate the antioxidant mechanisms by which RG exerts its protective actions. Materials and Methods: Fifty male Sprague-Dawley rats weighing ۲۵۰–۳۰۰ g were randomly divided into five groups: administrations of olive oil (control, PO), RG (۰.۴ mg/kg, PO), CsA (۳۰ mg/kg in olive oil, SC), RG (۰.۲ or ۰.۴ mg/kg, PO) plus CsA (۳۰ mg/kg in olive oil SC) every day for ۱۵ days. Results: SC administration of CsA (۳۰ mg/kg) to rats produced marked elevations in the levels of renal impairment parameters such as urinary protein, N-acetyl-beta-D-glucosaminidase (NAG), serum creatinine (SCr),and blood urea nitrogen (BUN). It also caused histologic injury to the kidneys. Oral administration of RG (۰.۲ and ۰.۴ mg/kg) markedly decreased all the aforementioned changes. In addition, CsA caused increases in the levels of malondialdehyde (MDA) and decreases in superoxide dismutase (SOD), glutathione peroxidase (GSH-Px), glutathione reductase (GSR), glutathione-S-transferase (GST), and glutathione in kidney homogenate, which were reversed significantly by both doses of RG. Conclusion: The findings of our study indicate that RG may play an important role in protecting the kidney from oxidative insult.

کلمات کلیدی:

Cyclosporine A-induced renal tubular injury, Glutathione expression rat, Repaglinide antioxidant