

Research Number 5:

منشور محلي في 2022

The Beneficial Effects of Lipoic Acid Versus Coenzyme Q10 on Arginine-Induced Acute Pancreatitis in Albino Rats: Histological and Immunohistochemical study

Rania H. Elsyade¹, Marwa M. Abdel Fattah², Doaa Mabrouk Khaled³ and Doaa Ebrahim Eldosoki⁴.

1 Department of Anatomy and Embryology, Faculty of Medicine, Helwan University, 2 Department of Histology and Cytology, Misr university for science and technology 3 Department of Histology and Cytology, Faculty of Medicine, Helwan University, 4Department of Histology and Cytology, Faculty of Medicine, Fayoum University.

Abstract

Background: Acute pancreatitis (AP) is a self-limiting condition to a widespread, deadly multi-organ failure that can result in death.

Objectives: to compare the protective effect of alpha lipoic acid (ALA) and Coenzyme (Q10) in an experimental rat model of L-arginine-induced AP.

Methods (Subjects): Forty adult male albino rats were randomized equally into 4 groups: (i) The control group; (ii) The AP group received L-Arginine by intraperitoneal (IP) injection in two doses of 2 g/kg body weight each, 1 hour apart, (iii) The ALA+AP group was injected with L-Arginine and intramuscular (IM) injection of ALA in two doses of 60mg/kg body weight; 1 hour before L-arginine injection and 24 hours after the second dose of L-arginine; (iii) The Coenzyme Q10+AP group was injected with L-Arginine and IM injection of Q10 in two doses of 30mg/kg body weight; 1 hour before L-arginine injection and 24 hours after the second dose of L-arginine. Histological, immunohistochemical for HSP70 and NF-κB, and morphometric studies were done followed by statistical analysis.

Results: AP group showed significant distortion of the pancreatic acini with obvious cellular damage while those treated by ALA and Coenzyme Q 10 especially ALA showed significant pancreatic tissue improvement as shown by HSP70 and NF-κB immunoexpressing.

Conclusion: ALA and Q 10 therapy proved a clear protective effect in suppressing experimentally generated AP in male albino rats, but the improvement was more obvious with ALA.

Keywords : Acute Pancreatitis, Lipoic Acid, Coenzyme Q10, HSP70, NF-kB