Effect of Nebivolol, Carvedilol and Metoprolol on

Doxorubicin-induced cardiotoxicity in Rats.

Thesis submitted in Partial fulfillment of the MSc degree in Pharmacology

By

Eman Sayed Said, Demonstrator of Pharmacology, Faculty of Medicine, FayoumUniversity

Supervisors

Prof. Dr. Aida AbdallahKhattabProf. Dr. SawsanAbd El-Aziz SadekProfessor of PharmacologyProfessor of PharmacologyFaculty of Medicine,CairoUniversityFaculty of Medicine, FayoumUniversity

Dr. Amani Nabil Shafik Assistant professor of Pharmacology, Faculty of Medicine, CairoUniversity.

> Faculty of Medicine CairoUniversity

> > 2011

<u>Abstract</u>

The comparative study of cardio protective activity of nebivolol, carvedilol and metoprolol was carried out on doxorubicin-induced cardiac toxicity in rats. The degree of protection was assessed both *in vivo* by short axis echocardiography measuring ejection fraction (EF), fractional shortening (FS), left ventricular systolic diameter (LVSD) and left ventricular diastolic diameter (LVDD) and *in vitro* bymeasuring theinotropic and the chronotropic responsesto isoproterenol (3μ M, 6μ M, 12μ M). Also histopathlogical study was doneusing Hematoxylin and Eosin as a basic stain and Toluidine blue for histopathological grading of cardiac tissue injure (0-3). The prophylactic treatments of the three drugs P.O was given daily for 12 days in a dose of 10mg/kg/day for nebivolol and carvedilol while metoprolol 30mg/kg/day simultaneously with doxorubicin injection3 mg/kg intraprotineally every other day for 12 days. In conclusion this study revealed that there is a significant difference between carvedilol and nebivolol whereas nebivolol has the best histopathological score for improvement cardiac toxicity.

Key words:

NebivololCarvedilolMetoprololDoxorubicin Heart