

Effect of Carvedilol and Nebivolol on Oxidative Stress-related Parameters and Endothelial Function in Patients with Essential Hypertension

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Oxidative stress and endothelial dysfunction have been associated with essential hypertension (EH) mechanisms. The purpose of this study was to evaluate the effect of carvedilol and nebivolol on the oxidative stress-related parameters and endothelial function in patients with EH. The studied population included 57 patients, either sex, between 30 and 75 years of age, with mild-to-moderate EH complications. Participants were randomized to receive either carvedilol (12.5 mg) (n = 23) or nebivolol (5 mg) (n = 21) for 12 weeks. Measurements included; 24-hr ambulatory blood pressure (BP), flow-mediated dilatation, levels of nitric oxide estimated as nitrite - a nitric oxide metabolite (NO₂) - in plasma, and oxidative stress-related parameters in plasma and erythrocyte. EH patients who were treated with nebivolol or carvedilol showed systolic BP reductions of 17.4 and 19.9 mmHg, respectively, compared with baseline values (p < 0.01). Diastolic BP was reduced by 13.7 and 12.8 mmHg after th