LIPIDS, LIPID PEROXIDATION AND REDOX STATUS IN HYPERTENSIVE PATIENTS ON LONG -TERM TREATMENT WITH DIURETICS OR CALCIUM CHANNEL BLOCKERS

SAMBANDAM. G & SANKAR .D

Prof. Maniarasan Memorial Poly Hospital, Chidambaram – 608 002, Tamil Nadu, India

ABSTRACT

The antiatherogenic potential of diuretic (hydrochlorothiazide) and calcium channel blocker (nifedipine) was compared by measuring lipid profile (total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol and triglyceride), lipid peroxidation (thiobarbituric acid reactive substances) and redox status (superoxide dismutase, catalase and glutathione peroxidase; vitamin C, vitamin E, β-carotene and reduced glutathione) in hypertensive patients who were on long-term treatment with these two drugs. Hundred mild to moderate hypertensive patients who were on medication with diuretic [n=50; hydrochlorothiazide (12.5-25 mg/day)] or calcium channel blocker [n=50; nifedipine (10-30 mg/day)] for atleast 3-4 years were participated in this baseline evaluation. Venous blood was collected from each patient and age matched control subjects for biochemical analysis. There was no difference in high density lipoprotein cholesterol and triglyceride between the two groups, but total cholesterol and low density lipoprotein cholesterol were significantly higher in hydrochlorothiazide group compared with nifedipine and with normal subjects. Plasma lipid peroxidation levels were significantly higher while redox status significantly lowered in the two groups compared to normotensives. In between the two groups, increased levels of redox status and lower levels of lipid peroxidation noted in nifedipine treated group. In the present study, both hydrochlorothiazide and nifedipine provide better control over blood pressure. The impact of nifedipine on lipid metabolism, lipid peroxidation and antioxidant defense system is more beneficial than hydrochlorothiazide treatment.