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SHORT COMMUNICATION

EFFECT OF ANTI-PLATELET THERAPY (ASPIRIN + PENTOXIPHYLLINE) ON PLASMA LIPIDS IN PATIENTS OF ISCHAEMIC STROKE

S. P. S. GAUR†, R. K. GARG*, A. M. KAR* AND R. C. SRIMAL

Department of Pharmacology and Clinical & Experimental Medicine
Central Drug Research Institute,
Lucknow - 226 001
and
**Department of Neurology,*
K.G.'s Medical College,
Lucknow - 226 003

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Abstract : Twentyone patients of ischaemic stroke were put on prolonged administration of antiplatelet drugs (aspirin 320 mg once daily with pentoxiphylline 400 mg thrice daily). The serum lipids along with other biochemical parameters were estimated before starting the treatment and after completion of 2 months of therapy.

No significant changes were observed in any of the biochemical parameters including lipid profile except in serum high density lipoprotein (HDL) which increased significantly (<0.05) after 2 months therapy.

It is concluded that 2 months antiplatelet therapy has no adverse metabolic effect in patients of ischaemic stroke and the raised serum HDL may contribute to cerebral protective effect.

Key words : metabolic effects, high density lipoproteins, antiplatelel therapy, ischaemic stroke, aspirin, pentoxiphylline

INTRODUCTION

The role of platelets in the etiopathogenesis of ischaemic stroke is well established while that of lipids is increasingly being recognised. Antiplatelet drugs like aspirin, dipyridamole and pentoxiphylline are extensively used in patients of ischaemic stroke and TIA (1, 2). However, the effects of prolonged antiplatelet therapy on lipid profile has not been extensively investigated.

Salicylates reduce lipogenesis (2) by partially blocking incorporation of acetate into fatty acids. They also inhibit epinephrine stimulated lipolysis in fat cells and displace long chain fatty acids from plasma proteins. These effects lead to increased utilization of fatty acids, phospholipids and cholesterol in serum (2). The effects of pentoxiphylline on serum lipids and other biochemical parameters have been studied by several workers (3). Oral or intravenous administration of pentoxiphylline showed no effects on any biochemical parameters in healthy and diabetic subjects (3, 4).

The present study was, therefore, planned to investigate the effect of a combination of aspirin and pentoxiphylline on biochemical parameters especially serum lipids after prolonged therapy in patients of ischaemic stroke.

METHODS

Twenty one patients of ischaemic stroke, aged 42-68 years, 14 males and 7 females, were included in the study. Each patient with a history suggestive of

†Corresponding Author

cerebrovascular accident was subjected to non-contrast computerized tomographic scan study. Patients of haemorrhagic stroke were excluded. After an informed consent, each patient was put on antiplatelet therapy (aspirin 320 mg once a day and pentoxiphylline, 400 mg thrice daily) for 2 months.

Serum lipids i.e. cholesterol (5), triglycerides (6) and HDL (7) were estimated by commercial kits provided by Boehringer Mannheim, GmbH Diagnostics, West Germany. Low density lipoprotein (LDL) and very low density lipoprotein (VLDL) were estimated by Friedewald formulae (8). Other biochemical estimations (Table I) were done by respective commercial kits provided by Boehringer Mannheim. All these estimations were done before and 2 months after commencing antiplatelet therapy. Data was analysed using unpaired 't' test.

RESULTS

After therapy there was no significant difference in any biochemical parameters except serum HDL which was significantly ($P < 0.05$) higher after treatment (Table I).

DISCUSSION

Prolonged antiplatelet therapy is effective in preventing subsequent stroke but metabolic effects of such therapy are likely to occur (2-4). Several studies have shown that aspirin alters serum cholesterol and triglycerides (2). However, pentoxiphylline had no effect on biochemical parameters (1,3,4). We found that even combination of pentoxiphylline and aspirin had no effect on these parameters, though there was a significant rise in HDL level.

HDL has an inverse relation to various cardiovascular and cerebrovascular complications of atherosclerosis (9). These drugs (aspirin + pentoxiphylline) might contribute to stroke prevention through increase in HDL.

TABLE I : Effect of anti-platelet therapy (aspirin 320 mg once daily + pentoxiphylline 400 mg thrice daily) on serum lipids and other serum biochemical parameters.

Values are mean ± SD of 21 patients

Parameters	*Before treatment*	*After treatment*
Urea (mg/dl)	20.3 ± 7.2	24.9 ± 12.2
Creatinine (mg/dl)	0.92 ± 0.20	1.04 ± 0.16
Fasting Glucose (mg/dl)	104.6 ± 10.4	108.0 ± 12.5
SGOT (I.U./L)	22.4 ± 10.3	23.2 ± 8.3
SGPT (I.U./L)	26.0 ± 9.3	29.8 ± 10.7
Proteins (g/dl)		
Total	7.3 ± 1.3	7.0 ± 2.6
Albumin	5.4 ± 1.0	5.0 ± 1.2
Globulin	2.3 ± 0.9	2.9 ± 0.8
Bilirubin (mg/dl)	0.94 ± 0.12	1.02 ± 0.24
Cholesterol (mg/dl)	170.0 ± 50.1	161.7 ± 50.6
Triglyceride (mg/dl)	165.1 ± 34.8	158.6 ± 45.9
HDL (mg/dl)	31.0 ± 9.9	42.3 ± 7.2*
LDL (mg/dl)	106.1 ± 43.2	98.7 ± 9.2
VLDL (mg/dl)	33.0 ± 7.0	31.7 ± 9.2

*P<0.005

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