

6. HYPOLIPIDAEMIC ACTIVITY OF SOME MEDICINAL PLANTS OF SRI LANKA

W.R. WIMALASIRI AND P.H.P. FERNANDO

Division of Biochemistry, Department of Basic Sciences, Faculty of Dental Sciences and Department of Biochemistry, Faculty of Medicine, University of Peradeniya.

Hyperlipidaemia, especially hypercholesterolaemia, causing the deposition of cholesterol in the arterial walls, is a predisposing factor for coronary heart disease (CHD). High Density Lipoproteins (HDL), in contrast, could scavenge the deposited cholesterol and prevent predisposition to CHD. Hence, it is advantageous to lower the serum total: HDL cholesterol ratio by therapeutic or dietary intervention.

In this study, two independent experiments were carried out where *Allium sativum* bulbs, *Murrya koenigii* leaves, *Sida acuta* roots, *Tinosporacordifolia* stems were studied in the first study, and *Aegle marmelos* roots, *A. marmelos*, *Allium sativum* bulbs, *Murrya koenigii* leaves and *Sida acuta* roots in the second study, were investigated for any possible hypocholesterolaemic activity. Hyperlipidaemic male Sprague-Dawley rats were treated with aqueous extracts of above plants, 200 mg/kg orally in the first experiment, and 1 g/kg orally in the second experiment, for six weeks, and bled following a 14 h fast, and the sera were analysed for the lipid profiles using "Randox" cholesterol assay kits. The data were analysed by the t-test.

In the first experiment, the total and the HDL cholesterol levels of the control group were 71.04 ± 6.58 and 38.76 ± 3.09 mg/dl, respectively (Total : HDL = 1.83). The test groups administered with the extracts of *A. sativum*, *M. koenigii*, *S. acuta* and *T. cordifolia* displayed total: HDL Ratios of 1.63, 1.76, 1.45, 1.70 respectively.

In the second experiment, the total and HDL cholesterol levels of the control group were 102.93 ± 42.02 and 32.86 ± 8.23 mg/dl, respectively. (Total : HDL = 3.13). The test groups dosed with the extracts of *A. marmelos* roots, *a marmelos* leaves, *A. sativum* bulbs, *M. koenigii* leaves and *S. acuta* roots displaced Total : HDL ratio of 1.31, 3.54, 6.70, 1.73 and 1.92 respectively.

This studies showed that among the plants tested *S. acuta* roots and *marmelos* roots were most effective in the reduction in the total: HDL, cholesterol ratio and thereby relieve the risk of CHD.