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Serum lipid profiles of newly diagnosed Sri Lankan breast cancer patients: A preliminary study

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Malignancy of the breast is the most common cancer among Sri Lankan women and women worldwide. Various nutritional, anthropometric and biochemical factors are recognized as causative of breast cancer even though the exact etiology of breast cancer remains elusive. The aim of this preliminary study was to analyze the levels of total cholesterol (TC), high density lipoprotein cholesterol (HDL), low density lipoprotein cholesterol (LDL), very low density lipoprotein cholesterol (VLDL), triglyceride (TG) and TC:HDL ratio of newly diagnosed breast cancer patients in Sri Lanka. Ethical clearance for the study was obtained from the Ethical Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura. Written consent was obtained from the newly diagnosed breast cancer patients (n = 36) between 35 – 79 years of age and the TC levels, LDL, HDL, VLDL and TG levels were determined.

The mean TC, LDL, HDL, VLDL and TG values were 251.9 ± 43.03, 176.34 ± 34.1, 43.2 ± 10.8, 32.31 ± 17.4 and 161.54 ± 86.9 respectively. A cholesterol level of less than 200 mg/dL was seen only in one patient among two on statins. Thirty five patients (97.2%) had elevated total cholesterol levels (> 200 mg/dL) with 21 patients (58.3%) having TC above the higher range (> 240 mg/dL). All participants were unaware of the elevated serum cholesterol levels except for two and none had a family history of hypercholesterolemia. According to the food intake data a possible association of dietary intake of cholesterol containing foods with the observed high blood cholesterol levels was not observed. Among these patients 13.8% had HDL < 35 mg/dL, 66.7% had LDL >160 mg/dL and 44.4% had TG levels above the borderline values. Considering the normal reference range of the TC:HDL ratio (2 – 5), 80.6% had a TC:HDL > 5. Current guidelines recommend that post menopausal and premenopausal women should have ratios less than 3.7 and 3.1 respectively. The study sample consisted of 72% of post menopausal women and all had TC: HDL > 3.7 and all premenopausal women had TC: HDL > 3.1.

The results of this preliminary study indicate that newly diagnosed breast cancer women in this study have high levels of TC and LDL-C levels while the TG and HDL-C levels were normal. Irrespective of the menopausal status, all the women showed high TC: HDL ratios. Maintenance of TC, LDL and TC: HDL below the recommended value may contribute to reducing the susceptibility to breast cancer. Determination of these parameters regularly from a young age in females is recommended.

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