INTRODUCTION

In studies which have been conducted in past decades regarding lipid lipoprotein profile had been largely in light of atherosclerosis (AS).

This atherosclerosis is the outcome of interaction of many factors viz. obesity, diabetes mellitus, stress, family history of ischaemic heart disease, sedentary habits, hypercholesterolemia, age, smoking, hypertension and sex.

There are striking sex difference of disease prevalence (Strong et al, 1979) being higher in males. Possible explanation lies in difference in endocrine make up of men. The incidence of cardiovascular disease as shown in Framingham study is also greater in postmenopausal as compared to premenopausal women of same age (Gordon et al, 1978).

The current median age of menopause is 50 years that is permanent cessation of menses from loss of ovarian function but approximately 8% of women undergo menopause before the age of 40 years.

Hysterectomy with or without removal of both the ovaries is the most frequently performed major operation in premenopausal women thus inducing surgical menopause.

The concept that women are protected premenopausally against coronary heart disease could be because
an endogenous protective factor which is present in reproductive years viz oestrogen.

Lower incidence of coronary heart disease in females has led to many to believe that endocrine factors are of importance for the homeostasis of lipids in plasma but also for the deposition and metabolism of lipids in vessel wall. Difference in cardiovascular disease with advancing age which is attributed to the onset of menopause. Thus one can suggest the premature menopause and that induced surgically at a younger age can have a greater impact or increased incidence of coronary heart disease as compared to women who remain menopausal. Menopause whether spontaneous or induced surgically manifests symptomatically due to end organ changes due to oestrogen deficiency.

The flashes pathognomonic symptoms are usually acute and short lived. Oestrogen deficiency causes skin to become thinner and wrinkled. Itching bleeding or dyspareunia due to changes in the genital tract and anxiety depression often appear in the menopausal period. Declining oestrogen level lead to increase rate of bone resorption and urinary excretion of calcium resulting in reduced bone density or osteoporosis.

Various epidemiological studies over the past three decades have documented a linear relationship
between coronary heart disease, risk in the general population and the lipoprotein values which are proportional to the serum total cholesterol.

Lipids by their biochemical structure are insoluble in water and there is special carrier particles 'Lipoproteins' for their transportation in circulation.

Lipid components can be evaluated in the terms of serum total cholesterol, triglycerides and high density lipoprotein (HDL), low density lipoproteins (LDL) and very low density lipoprotein (VLDL) cholesterol fractions. In liver function lipid and lipoprotein metabolism is an important aspect. HDL at present regarded as cholesterol regulators which transfer cholesterol from peripheral tissues, including vascular endothelium to liver and subsequent cholesterol excretion through bile. HDL has also been suggested to block peripheral receptors thereby reducing cholesterol uptake and storage in the epithelial cells.

More than 90% of plasma cholesterol is carried by LDL and HDL. Concentration of LDL cholesterol is directly related to and predictive of cardiovascular disease over a wide range. This relation underlies the association between cardiovascular disease and serum cholesterol. For later reflects LDL concentration. Moreover, morbidity and mortality rates from cardiovascular
disease in different communities are directly and linearly related with serum concentration of total cholesterol and LDL. The ratio of LDL/HDL is about as efficient as any other lipid profile, a ratio of 5 indicates average high risk.

Various studies have indicated an increase in STC and LDL level suggesting that lack of ovarian function particularly oestrogen is responsible for it or menopause or after oopherectomy. This concept has been greatly re-inforced by observations that serum lipid patterns and plasma cholesterol levels can be altered by administration of oestrogens.

Functioning ovaries provides protection against coronary heart disease likely because of oestrogen production which increases HDL-c and reduces LDL cholesterol. Work by Imai et al (1980) indicated that it is not the free cholesterol which causes the intimal damage but rather abnormal oxidation product by cholesterol. Oestrogen somehow prevents abnormal oxidation. Thus a group of non castrated women would be expected to be at less risk as compared to castrated women of same age group.

A study was carried out in our department in previous year to know the lipoprotein changes after castration, but it could not find any significant changes in 3 months after operation. Six month follow up of this study was done by present study. As there are very few
studies on Indian females, the present study was undertaken in our department with the following aims:

1. To study the changes in serum lipoprotein levels in relation to hormonal status in 6 months of hysterectomy with or without oopherectomy.

2. To study the basal serum lipoprotein level in relation to hormonal status in patients undergoing hysterectomy with or without oopherectomy.

3. To study the post operative serum lipoprotein profile in relation to induced hormonal status and quantitative and qualitative comparison of them between hysterectomy, unilateral oopherectomy and bilateral oopherectomy.