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STUDY ON CORRELATION BETWEEN LIPID PROFILE AND UTERINE FIBROIDS IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL

Obstetrics & Gynaecology

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ABSTRACT

Background: Fibroids most common benign tumors arising from the myometrium of the uterus, was found that women with fibroids had significantly higher levels of serum HDL-C compared with control groups.
Aims : To compare the mean serum cholesterol level; mean HDL-C level andmean LDL- C level in patients with uterine fibroids with the control group.
Methods: This cross sectional study was conducted after taking consent from200 women in the age group of 30-50 years . Out of which 100 females with sonographic diagnosis of uterine fibroid were taken up as cases and 100 females in similar age group,demographically matched with no fibroids as control. Comparative study on lipid profile of both the group analysed.
This study was conducted after receiving approval from institutional ethical committee .
Results: In our study there was strong direct significant correlation between largest fibroid volume (3cc) and HDL-C level (mg/dl) i.e. a p value of 0.0001and a r value of 0.671; clearly establishing the fact that patients with higher levels of HDL-C tended to have larger fibroids.
Conclusion : All these findings more favourable lipid profile in fibroid group, lower atherogenic index and the strong direct positive correlation.

KEYWORDS

uterine fibroid , lipid profile

INTRODUCTION

Uterine fibroids are the most common benign tumors arising from the myometrium of the uterus 1 . It was found that women with fibroids had significantly higher levels of HDL-C compared with control patients 2. . This comparative study on lipid profile of fibroid patients and those without uterine fibroids will help us in analyzing the possible associations between dyslipidemia and uterine leiomyomas and estimating the risk of development of cardiovascular disease by comparing the atherogenic indices and will help to validate the estrogen theory in leomyomatosis.

MATERIAL AND METHODS:

This Cross-sectional study was conducted after taking consent from 200 women in the age group of 30-50 years who presented in Gynaecology OPD . Out of which 100 females with sonographic diagnosis of uterine fibroid were taken up as cases and 100 females in similar age group demographically matched with no sonographic evidence of fibroids were controls.The demography and clinical characteristics of each patient were recorded and comorbidities considered. Fibroid related symptoms were accurately investigated . Blood parameters specially lipid profile were documented and analysed statistically.

OBSERVATION AND RESULTS

Table – 1: Demographic characteristics of the study group.

Variables	Fibroid	Control	t-value	p-value	Significance
	Mean±SD (Min-Max)	Mean±SD (Min-Max)			
Age (year)	38.7±5.5 (30–50)	40.5±6.2 (30–50)	2.2	0.03	Significant
Weight (Kg)	59.6±7.3 (48.0–89.0)	59.5±7.6 (43.0–95.0)	1.6	0.11	Not Significant
Height(mt)	1.61±0.06 (1.4–1.9)	1.62±0.06 (1.4–1.8)	0.5	0.46	Not Significant
BMI (Kg/m^2)	22.9±3.1 (15.5–34.5)	22.7±3.4 (16.9–37.1)	0.4	0.68	Not Significant

By Students' t-test

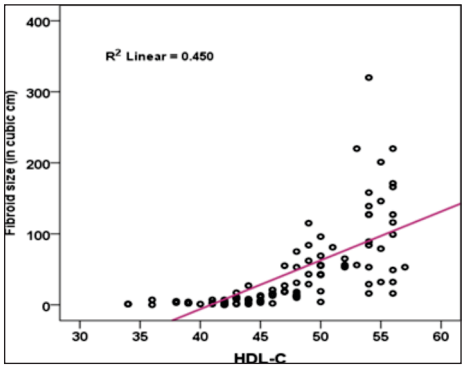

Fig: 1. Correlation between fibroid size and HDL-C

Table – 2. Correlation coefficient (r) between fibroid size and HDL-C

Type	r	p-value	Significance
Parametric Pearson Correlation coefficient	0.671	0.0001	Highly significant

Table – 3. Comparison of Cholesterol (mg/dl) between the study groups

Variables	Fibroid	Control	t-value	p-value	Significance
	Mean±SD	Mean±SD			
Cholesterol (mg/dl)	149.0±33.7	175.0±32.9	5.6	0.0001	Highly Significant

Table 4: Comparison of HDL-C (mg/dl) between the study groups

Variables	Fibroid	Control	t-value	p-value	Significance
	Mean±SD	Mean±SD			
HDL-C (mg/dl)	47.5±5.8	38.1±7.5	9.9	0.0001	Highly Significant

Table – 5: Comparison of LDL-C (mg/dl) between the study groups

Variables	Fibroid	Control	t-value	p-value	Significance
	Mean±SD	Mean±SD			
LDL-C (mg/dl)	100.1±31.4	100.5±31.4	0.09	0.93	Not Significant

Table 1 depeict the mean age uterine fibroids case was (38.7±5.5) years (range 30-50 years) compared to the mean age of control group was (40.5±6.2) years (range 30-50 years) which was statistically significant. But relation in weight and BMI in both the groups statistically insignificant.

Table-2 and Fig- 1 shows strong direct significant correlation between largest fibroid volume (3cc) and HDL-C level (mg/dl) i.e. a p value of 0.0001and a r value of 0.671 was evaluated using Pearson Correlation coefficient formula.

We (Table-3.) compared the mean cholesterol level (mg/dl) between the study groups and it was observed that in fibroid cases the value was (149.0±33.7) mg/dl which was lower than that of control group (175.0±32.9) mg/dl, with a p-value of 0.0001 which is highly significant.

Table-4 depicted the mean HDL-C level (mg/dl) between the study groups . It was observed that in fibroid cases the value was (47.5±5.8) mg/dl which was higher than that of control group (38.1±7.5) mg/dl, with a p-value of 0.0001 which is highly significant.

The mean LDL-C level (mg/dl) between the study groups analyed in Table -5 . It was observed that in fibroid cases the value was (100.1±31.4) mg/dl which was slightly lower than that of control group(100.5±31.4) mg/dl, with a p-value of 0.93 which is not significant.

DISCUSSION:

In our study, most of the cases were of 30-40 year age group (64%). While 36% cases belonged to 41-50 year age group. These when compared with the control patients were found to be statistically insignificnt (p = 0.19). Narine M et al[3] and others reported 50.8% - 62.5%, prevalence of uterine fibroid cases in 30-40 year groups patient.

Our study suggested that there was strong direct significant correlation between largest fibroid volume (3cc) and HDL-C level (mg/dl) i.e. a p value of 0.0001and a r value of 0.671; Interestingly, similar relation between serum levels of HDL-C reported by Hendy A et al[4].

Moreover Sadlonova et al. [5] reported that in the subgroup aged 30-45 years, patients with higher levels of HDL-C tended to have larger fibroids.

Women with uterine fibroids reported hypercholesterolemia significantly less often than women without fibroids. Our study showed that measurement of total serum cholesterol was significantly lower in patients with fibroids compared with controls (149.0±33.7 vs.175.0±32.9; P=0.0001). This was somewhat different from the findings reported by Sadlonova et al. [5]

Author [5] also found no significant difference in measurement of total serum cholesterol between women with fibroids and their control group, although lower levels of total serum cholesterol were reported in women with fibroids.

Our study compares the mean HDL-C level (mg/dl) between the study groups and it was observed that in fibroid cases the value was (47.5±5.8) mg/dl which was higher than that of control group (38.1±7.5) mg/dl, with a p-value of 0.0001 which is highly significant. It was in accordance with Narine et al [3] where the results of the study confirmed a significantly higher levels of serum HDL-C in women with fibroids compared with similar findings reported by Sadlonova et al [5]. He found that women with fibroids had significantly higher levels of serum HDL-C compared with control patients [5]. The latter study also reported a negative association between some parameters of metabolic syndrome and fibroid volume[5].

The above study compares the mean LDL-C level (mg/dl) between the study groups and it was observed that in fibroid cases the value was (100.1±31.4) mg/dl which was slightly lower than that of control group (100.5±31.4) mg/dl, with a p-value of 0.93 which is not significant. Hussam et al [6] found no significant difference in LDL between women with fibroids and women without fibroids.

This finding is consistent with Kong et al [7] study in China. However, this finding is inconsistent with results of Sadlonova et al [5]study in Czech that reported significant decrease in LDL of women with fibroids.

Our study compares the mean VLDL-C level (mg/dl) between the study groups and it was observed that in fibroid cases the value was (30.9±17.1) mg/dl which was slightly lower than that of control group (31.0±14.0) mg/dl, with a p-value of 0.97 which is not significant.

CONCLUSIONS

Uterine leiomyomas are the most common gynaecological tumours and are a significant health concern for many women. Even after being so prevalent, the exact etiology is still not known. Though certain epidemiological and experimental evidence has established an essential role for ovarian hormones in the pathogenesis of this disease.Our study was designed to investigate the lipid profile of patients with uterine fibroids and to compare it with the lipid profile of women without uterine fibroids. In the present study both groups were comparable in their age, parity and BMI in order to avoid possible bias caused by the effect of these variables on lipid profile. In the present study, all these findings (more favourable lipid profile in fibroid group, lower atherogenic index and the strong direct positive correlation between volume of the largest fibroid and serum HDL-C level) correspond to the estrogen theory in myomatosis. Therefore, it was concluded that estrogen does play a vital role in etiopathogenesis of uterine fibroids.

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