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Original Research

Lipid profile level in females with endometrial cancer

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ABSTRACT:

Background: Increasing body mass index (BMI) is strongly associated with endometrial cancer (EC) incidence and death. The present study was conducted to asses lipid profile level in patients with endometrial cancer. **Materials & Methods:** 20 patients of endometrial cancer were put in group I and control with no endometrial cancer in group II. 5 ml of venous blood was obtained and assessed for lipid profile such as HDL, LDL, cholesterol, VLDL etc. **Results:** Age group 20-30 years had 26 and 22, 30-40 years had 10 and 18 and 40-50 years had 20 and 16 in group I and II respectively. The difference found to be significant (P< 0.05). The mean triglycerides (mmol/l)was5.20 in group I and 4.80 in group II, total cholesterol (mmol/l) was 1.42 in group I and 1.08 in group II, HDL-cholesterol (mmol/l) was 1.32 in group I and 1.10 in group II and LDL-cholesterol (mmol/l) was 1.74 in group I and 1.76 in group II. The difference was significant (P< 0.05). **Conclusion:** Triglycerides were consistently associated with a greater for endometrial cancer in women. **Key words:** endometrial cancer, lipid profile, Females

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INTRODUCTION

Increasing body mass index (BMI) is strongly associated with endometrial cancer (EC) incidence and death. The death rate for this cancer has also been increasing, with an average increase of 1.4% per year between 2005-2014 and an estimated 10,470 deaths in 2016.¹ The overall five-year survival for endometrial cancer is 87%.A greater amount of adipose tissue is thought to improve efficiency by which androstenedione converts into estrone, resulting in higher estrogen levels, which are positively associated with EC risk.² Additionally, estrogen is thought to inhibit actions of peroxisome proliferatoractivated receptor alpha (PPAR-alpha), a ligandactivated transcription factor that is heavily involved in catabolism of fatty acids and lipoproteins.^{3,4} However, few epidemiological studies have investigated whether commonly measured markers of the lipid metabolism as well as glucose, which may have changed following overweight or obesity, are associated with the risk of EC.^{5,6} Incidence rates of endometrial carcinoma show wide inter-country variations. Carcinoma of the corpus uteri is a disease of affluent societies and countries with westernized lifestyles.^{7,8}The present study was conducted to asses lipid profile level in patients with endometrial cancer.

MATERIALS & METHODS

The present study comprised of 56female patients of endometrial cancer. All were informed regarding the study and their written consent was obtained.

Data such as name, ageetc. was recorded. Group I comprised of cases of endometrial cancer and control with no endometrial cancer. In all patients, 5 ml of venous blood was obtained and assessed for lipid profile such as HDL, LDL, cholesterol, VLDL etc. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS Table I Distribution of patients

Age group (years)	Group I	Group II	P value
20-30	26	22	0.04
30-40	10	18	
40-50	20	16	

Table I, graph I shows that age group 20-30 years had 26 and 22, 30-40 years had 10 and 18 and 40-50 years had 20 and 16 in group I and II respectively. The difference found to be significant (P < 0.05).





Table II Assessment of lipid profile

Lipid profile	Group I	Group II	P value
Triglycerides (mmol/l)	5.20	4.80	0.04
Total cholesterol (mmol/l)	1.42	1.08	0.02
HDL-cholesterol (mmol/l)	1.32	1.10	0.05
LDL-cholesterol (mmol/l)	1.74	1.76	0.94

Table II, graph I shows that mean triglycerides (mmol/l) was 5.20 in group I and 4.80 in group II, total cholesterol (mmol/l) was 1.42 in group I and 1.08 in group II, HDL-cholesterol (mmol/l) was 1.32 in group I and 1.10 in group II and LDL-cholesterol (mmol/l) was 1.74 in group I and 1.76 in group II. The difference was significant (P < 0.05).





DISCUSSION

The molecular mechanisms underlying how adipose tissue and obesity contribute to the pathogenesis of EC are becoming better understood and have revealed a number of rational strategies, both behavioral and pharmaceutical, for the prevention of both primary and recurrent disease.^{9,10,11} The present study was conducted to asses lipid profile level in patients with endometrial cancer.

In present study, age group 20-30 years had 26 and 22, 30-40 years had 10 and 18 and 40-50 years had 20 and 16 in group I and II respectively. MacDonald et al¹²ascertained if a relationship exists between the constant of conversion of plasma transfer androstenedione to estrone ([rho]AE1BU) and total body weight or excessive body weight in 50 postmenopausal women, of whom 25 had adenocarcinoma of the endometrium and 25 had no endometrial disease. The [rho]AE1BU ranged from 0.015 to 0.129 in these 50 women. The [rho]AE1BU in the women with endometrial cancer was $0.051 \pm -$ 0.006 (mean +/- S.E.), whereas that in the women with no endometrial disease was 0.039 ± 0.004 . These values are not significantly different (p greater than 0.05). The body weights of these 50 women ranged from 104 to 430 pounds. The weight of the patients with endometrial cancer was 234 +/- 16 pounds and that for the women with no endometrial disease was 194 +/- 12 pounds. A statistically significant correlation was found between [rho]AE1BU and body weight and between [rho]AE1BU and excessive body weight in both groups of women. Moreover, obesity and aging appear to act in concert to potentiate the conversion of plasma androstenedione to estrone in extraglandularsites since the [rho]AE1BU is considerably greater among obese postmenopausal women than among comparably obese premenopausal women.

We found that mean triglycerides (mmol/l)was5.20 in group I and 4.80 in group II, total cholesterol (mmol/l) was 1.42 in group I and 1.08 in group II, HDL-cholesterol (mmol/l) was 1.32 in group I and 1.10 in group II and LDL-cholesterol (mmol/l) was 1.74 in group I and 1.76 in group II.Seth et al¹³assessed possible links between lipid profiles and EC risk, while also taking into account BMI, parity, and menopausal status at baseline. They created a cohort of 225,432 women with baseline values for glucose, triglycerides (TG), and total cholesterol (TC). Two subgroups of 31,792 and 26,317 had, in addition, baseline measurements of HDL, LDL, apolipoprotein A-I and apoB and BMI, respectively. During mean follow-up of 12 years (SD: 4.15), 1,144 persons developed endometrial cancer. A statistically significant association was found between TG and EC risk when using both quartiles and a clinical cutoff (Hazard Ratio (HR): 1.10, 1.34, and 1.57 for the 2nd, 3rd, and 4th quartile, compared to the 1st, with P-value for trend.

Swanson et al¹⁴studied the risk of endometrial cancer in relation to serum cholesterol, low density lipoprotein cholesterol, high density lipoprotein triglycerides. cholesterol, and Contrary to expectation, blood lipids were, in general, lower among cases compared with controls. The effects of low blood lipids, specifically cholesterol and lowdensity lipoprotein cholesterol, were limited to older women (> or = 55 years). Risk of the disease in this subgroup of 177 cases and 110 controls was increased 3-4-fold among those with the lowest cholesterol or low-density lipoprotein cholesterol values. The low lipid values of older cases did not appear to be a consequence of the disease. While they cannot rule out the possibility that hypocholesterolemia is a predisposing factor for endometrial cancer, there is no obvious biological explanation for the inverse association.

The limitation of the study is small sample size.

CONCLUSION

Authors found that triglycerides were consistently associated with a greater for endometrial cancer in women.

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