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Association between lipid profile and serum testosterone in patients with hirsutism disease

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Background: Hirsutism is defined as the growth of thick, dark excessive terminal hairs on the androgen dependant areas of human body including the upper lips, chin and mandibles.Hirsutism may either be idiopathic or it may be caused by polycystic ovary syndrome, non-classic adrenal hyperplasia, adrenal or ovarian tumors. Androgen excess is the cardinal phenomenon that leads to hirsutism. Women with polycystic ovary syndrome (PCOS) shows an abnormal lipoprotein profile, which is characterized by raised concentrations of plasma triglyceride, marginally elevated LDL-cholesterol, and reduced HDL- cholesterol.There is relationship between lipid abnormalities and serum testosterone levels.Among the causes of hirsutism the relation is well established in PCOS but there is limited data on other causes of hirsutism which suggest this relationship.

Objective: The aim of this study was"To establish relationship between lipid profile and serum testosterone in patients with hirsutism."

Methods: All female patients of reproductive age group 18-45 presenting with hirsutism and who gave consent for this study were included while, the patients of known metabolic diseases like diabetes mellitus, hypertension were excluded. Hundred female patients were included in the study. After approval from ethical committee of Advance Study and Research Board (ASRB) Khyber Medical University, blood sample of hirsutism patients were collected for serum testosterone and lipid profile analysis in laboratory at Combined Military Hospital Peshawar. Serum lipids were analyzed on Selectra E automated chemistry analyzer using kits provided by Merck Pakistan. Serum testosterone level was analyzed by a kit (Access Testosterone Assay) provided by Beckman Coulter, using chemical luminescence technique. The data obtained was analyzed through SPSS version-16 software.

Results: A significant p (<0.05) and a positive correlation (r=0.316) of testosterone with total cholesterol and positive correlation (r=0.303) of testosterone with LDL cholesterol, a non significant p (>0.05) and a positive correlation (r=0.041) of testosterone with HDL cholesterol was observed. Where as a non significant p (>0.05) and no correlation (r=0.00) of triglyceride with testosterone was seen.

Conclusions: This study concluded that serum testosterone relationship with lipid profile in hirsutism disease shows significant relationship with total cholesterol. Subsequently, this study also elaborated serum testosterone relationship with LDL cholesterol in hirsutism disease. A significant and positive correlation relationship was found.This study concluded that in hirsutism disease when level of serum testosterone deviated from normal point also brings deviation in total cholesterol and LDL cholesterol.

Limitations: To investigate each and every patient of hirsutism for its cause, was not possible due to lack of resources and funds.

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