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**Original article:**

**A study of fasting plasma glucose, serum uric acid, lipid profile and thyroid hormones in adolescents in the age group of 15-20 years with special reference to BMI**

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**Abstract:**

**Introduction:** Obesity is a term used to describe individuals with excess body fat. Excess calorie intake coupled with lack of enough physical activity results in obesity. Obesity may occur during childhood (juvenile onset) or in adults. Obesity is associated with metabolic disorders-hyperlipidaemia (with elevation of both cholesterol and triglyceride), gall stones, hyperuricaemia and gout and non insulin dependent diabetes mellitus.

**Materials and Methods:** The present study was consisted of 120 students between the age group of 15-20 years of both genders which were randomly selected from 1st professional MBBS students, paramedical students and students from regional college of nursing. Fasting plasma glucose (FPG), serum uric acid, lipid profile and thyroid hormones were estimated with special reference to BMI. The study subjects were grouped according to BMI, Group I with BMI 18.5-24.9, Group II with BMI 25-29.9 and Group III with BMI>30 of both genders.

**Observations and results:** A statistically significant difference of fasting plasma glucose was found between group I and III (P<0.05). The mean TSH levels showed significant difference between group I and group III (P<0.001) and between group I and group II (P<0.05).There was a significant difference of the mean uric acid levels between group I and group III (P<0.05). Among the lipid profile total cholesterol and LDL cholesterol were very significantly elevated (p<0.001).

**Conclusion:** Obesity is most frequently associated with Diabetes mellitus. The results of the present study showed that there was a positive correlation between FPG and BMI>30(Group III) and between TSH and BMI>30(Group III). Dyslipidemia appears to be associated with the progress of Diabetes mellitus.

**Key words:** Obesity, dyslipidemia, HDL cholesterol, LDL cholesterol