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**Original article:**

**Leptin Level in Obese women with and without type 2 Diabetes Mellitus**

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**Abstract:**

**Introduction**: Leptin is an adipocyte-secreting hormone which regulates appetite and body weight. Leptin ,a 16 KDa circulating hormone is a protein made of 167 aminoacids . Leptin functions primarily as an anti-obesity hormone. Its serum concentrations in healthy individuals positively correlate with body fat content,but it correlates negatively when energy intake is reduced and energy stores in fat are declining.The aim of the study is to determine the leptin levels in the obese women in whom type 2 diabetes mellitus were present or absent.

**Methods:** The study was conducted in female patients attending outpatient department, Department of medicine and Endocrinology,Gauhati medical college and hospital,Guwahati,Assam.Forty obese women with type 2 Diabetes(Test group) and forty obese women without type 2 diabetes(Control group) were enrolled in the study. In both the groups, The BMI,WC,HC and WHR were measured. Leptin,HBA1c,Creatinine and lipid profile were measured.

**Observations and Results:**In the present study comparison between the anthropometric,clinical and biochemical characteristics of the control and test group was done.The BMI for the test group and control group was 31.78±1.13 kg/m2 and 32.51±1.60 kg/m2 respectively (p=0.022) which is statistically significant. Leptin level in test group (20.64±5.64ng/ml)was lower than in control group (29.14±6.81 ng/ml). This difference in mean was found statistically very significant(p=0.001).Leptin was well correlated with BMI in test group (r=0.476,p=0.001).

**Conclusion:**The mean±SD of serum leptin level in the test group was found to be significantly lower than that of the control group.This difference in serum leptin level between the diabetic obese and non-diabetic obese was explained by altered body fat distribution.Serum leptin levels had a positive correlation with increased total adipose tissue,a known risk factor for type 2 diabetes,Yet the role of leptin in the etiology of diabetes remain unclear.A more elaborate study would have been desirable to precisely establish the role of leptin in diabetes and may help in understanding pathophysiology and perhaps in developing the treatment for diabetes.

Keywords: Leptin,Type2 Diabetes,Obesity,BMI