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Autonomic Function Test in Obese Among Mid-Western Population of Nepal

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Purpose: Obesity is associated with metabolic risk factors such as high blood pressure, blood fat abnormality, and glucose intolerance which may influence the morbidity and mortality of cardiovascular diseases.Beside being a risk factor for cardiovascular disease, certain cancers and type II diabetes, obesity has also been associated with change in autonomic function in human.Although a lot of progress has been achieved in past decade on accessibility and awareness about health, the obesity remains impending and burgeoning health concern in Nepal. With this trend, we can foresee that the Body Mass Index (BMI) one of the commonly used indirect measure of obesity might potentially turn out to be one of the leading factor of autonomic dysfunction.

Methods: 100 healthy subjects were screened and divided into 2 groups- Group I(BMI>30) and Group II (BMI< 30).Height was measured by stadiometer with subjects having their shoes removed. Weight was measured with weighing machine in light clothes. BMI was calculated using the formula: BMI= weight (kg)/ height (m^2)

Resting heart rate (RHR) was recorded with Lead II of ECG. Blood pressure (BP) and Heart Rate (HR) were recorded in supine position and on immediate standing.Cold pressure test: Resting BP was recorded in sitting position. Then the subjects were asked to immerse the hand in cold water, and the BP was measured from other hand. Data was analyzed using SPSS 16 (Statistical Package for Social Science).

Result: Our result showed that RHR of Group I (79.32 ± 4.22) was higher than that of Group II (74.38 ± 7.26).However, on student –T test, BP and HR response to immediate standing (P =0.34&P=0.23 respectively) were non-significant between obese and non-obese person. When the correlation was done for the change in BP in response to cold pressor test in between obese and non obese person it was found to be significant (P = 0.04).

Conclusion: Our data suggests that the BMI can be a predictor of autonomic dysfunction.

Keywords: Body Mass Index, Autonomic Function, Resting Heart Rate, Cold pressortest