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Serum Amylase Enzyme Level and Body Mass Index: Is there any Correlation?

Weerasinghe W. C. A.[1], Risla M. B. F.[1], Dias P.[2], Priyadarshani A. M. B.[1]

Abstract

Amylase enzyme is important in carbohydrate digestion. However, abnormal levels of serum amylase are associated with disease conditions. Usually, a serum amylase test is recommended for patients who are already diagnosed with clinical complications such as acute and chronic pancreatitis, at its severe stage. So, it has great importance on screening serum levels of amylase enzyme in early stages as there are no published data in Sri Lanka. Therefore, the objective of this study was to investigate whether there is a relationship between serum amylase level and Body Mass Index (BMI) in healthy individuals in Sri Lanka. A descriptive cross-sectional study was conducted using altogether 120 individuals belonging to 22-35 years. An equal number of individuals (n=30) was recruited in each BMI category to compare the effect of BMI on serum amylase level. BMI was calculated according to the standard protocol. The serum amylase level was measured by MISPA VIVA semi-automated Clinical Chemistry Analyzer. An independent sample t-test was used to compare the statistical significance of differences in mean serum amylase levels between males and females whereas a One-way ANOVA test was used to compare the mean values of serum amylase enzyme level across categories of BMI in females and male study populations. Pearson's correlation coefficient (r) was used to evaluate the correlation between serum amylase enzyme level and BMI. The minimum and maximum serum amylase levels reported from the study population were 15.6 and 132.19 U/L, respectively. The mean serum amylase level of females was 72.35 U/L and in males, 63.28 U/L. In the study population, the mean serum amylase enzyme levels of underweight, normal, overweight, and obese groups were 69.32, 69.30, 70.25, and 70.28 U/L, respectively. In males, the mean serum amylase enzyme levels of underweight, normal, overweight, and obese groups were 63.30, 48.82, 51.32, and 80.06 U/L, respectively and in females, 70.24, 74.42, 81.20, and 62.79 o U/L, respectively. Results showed that in males, a statistically significant difference of serum amylase enzyme levels only between normal weight and obese (p=0.006) and overweight and obese (p=0.002) groups. In females, there was no statistically significantly different in serum amylase level between any of the BMI groups. Serum amylase enzyme level was significantly higher in females than males (p=0.042). There was no significant linear correlation between serum amylase enzyme level and BMI in both males (r=0.204, p=0.248) and females (r=-0.046, p=0.671).

Keywords: *BMI, gender, serum amylase*

[1] Department of Medical Laboratory Sciences, Faculty of Allied Health Sciences, University of Sri Jayewardenepura, Sri Lanka
[2] Department of Statistics, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka
Corresponding author. priyadarshani@sjp.ac.lk