Association of Serum Prolactin with Troponin-I in Acute Myocardial Infarction

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Serum prolactin is elevated in acute myocardial infarction (AMI) and stroke. Prolactin’s causal role is suggested by its association with obesity, hypertension, diabetes, insulin resistance and dyslipidaemia. Hyperprolactinemia also leads to arteriosclerosis and impaired endothelial function.¹ This study assessed serum prolactin in patients with AMI and evaluated its association with serum cardiac troponin – I.

An observational case control study was conducted in patients aged ≥18 years, diagnosed with Acute Myocardial Infarction (AMI) as per the Third Universal Definition by Thygesen K et al 2012, presenting in the ICCU. The conditions which alter serum prolactin levels were excluded.

91 patients of acute myocardial infarction participated in the study. All patients underwent routine investigations and cardiac troponin I and serum prolactin. The unpaired t-test and ANOVA were used for statistical analysis. The mean prolactin level was higher in females (21.47±4.24 ng/ml) than the males (19.70 ± 2.39 ng/ml, p=0.703) but statistically insignificant. The mean serum prolactin of AMI with high prolactin group (n=34) was 36.62 ± 4.20 ng/ml and that of normal prolactin group (n=57) was 10.42 ± 0.60 ng/ml. Mean serum troponin-I level was 11.61 ± 2.43 ng/ml in patients in high serum prolactin group as compared to 9.90 ± 1.28 ng/ml in patients in normal serum prolactin group but was not statistically significant (p=0.497). As shown in Figure 1 Serum prolactin did not correlate significantly with Troponin-I (p=0.622).

The prevalence of hyperprolactinemia is 0.4% (1 out of 250) in healthy adult population.³ In our study, 37.36% patients had high serum prolactin levels after an acute attack of myocardial infarction. The positive association between serum prolactin concentrations and myocardial infarction observed in our study is consistent with previous observations by Al-Kuraishy² et al. This increase of systemic prolactin may be representative of the general neuroendocrine stress response, a role of prolactin as causal factor in the thrombotic diseases is possible also the increment in serum prolactin is positively correlated with troponin I which is unsimilar to our study and the differences could be due to assay used and time elapsed in getting Troponin I after AMI.

Mean serum prolactin was elevated in AMI patients. 37.36% of patients with AMI had high serum prolactin levels as compared to 4.44% thus showing the need to better understand role of Prolactin in Etiopathogenesis and Prognosis of Myocardial Infarction. However we could not find a significant association of Troponin-I levels with serum prolactin.

References