

ASSOCIATION OF SERUM CORTISOL WITH SEVERITY OF CORONARY ARTERY DISEASE AMONG PATIENTS ADMITTED TO THE CARDIO-THORACIC UNIT OF SRI JAYEWARDENEPURA GENERAL HOSPITAL

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Cortisol is the most biologically active of the glucocorticoids and enables organs to respond to physical and emotional stress by maintaining homeostasis. Cortisol secretion shows a circadian rhythm with the highest secretion seen early morning. Hyperactivity of hypothalamic pituitary adrenal axis combined with tissue hypersensitivity to glucocorticoids may contribute to more severe atherosclerosis and CAD. The salivary cortisol is identified as being independently associated with atherosclerosis of carotid arteries. Since the prevalence of coronary artery disease is high among Sri Lankans, the study was conducted to assess the association of serum cortisol concentration with severity of coronary artery disease of patients who awaiting Coronary Artery Bypass Graft surgery. A cross sectional descriptive study was carried out at the Cardio-thoracic Unit of Sri Jayewardenepura General Hospital and University of Sri Jayewardenepura. Study sample consisted of 102 patients (67-male (57±10 years) and 35-females (58±7 years)). The morning serum cortisol was measured by enzyme immune assay method of mini Vidasimmune analyzer. Severity of coronary artery disease was evaluated by Gensini score using the coronary angiogram which assigns a severity score according to the degree of luminal narrowing and geographical importance of each coronary stenosis. Patients were divided in to three groups depending on 1st (cortisol <81 ng/mL), 2nd (81-141 ng/mL) and 3rd (>141 ng/mL) quartile. The Pearson correlation and independent t test ($p < 0.05$) was used (SPSS 16.0 version). The serum cortisol ranged from 4–245 ng/mL. The Gensini score ranged from 4–128. A significant positive correlation was observed between cortisol and Gensini score ($r=0.3$, $p=0.005$). More severe coronary artery disease (Gensini score) was observed in patients those who had serum cortisol >141 ng/mL compared to patients who had cortisol concentrations < 41ng/mL. According to the correlation the severity of coronary artery disease (as evaluated by Gensini score) was higher when serum cortisol was high irrespective of gender.

Keywords: Coronary artery disease, cortisol, Gensini score