



# **Paraoxonase-1 and Glutathione Peroxidase Activity as a Screening Tool in Detecting Severity of Coronary Artery Disease: Case Control Feasibility Study**

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**Abstract:** Glutathione peroxidase and paraoxonase-1 is reported to be a useful marker for monitoring cardiovascular disease. Due to the paucity of information on the association of above markers and severity of coronary artery disease in South Asian patients, case control study was performed with 85 patients (58 males and 27 females) 40-60 years of age confirmed as having coronary artery disease on coronary angiography findings and 85 age and sex matched healthy volunteers as controls. Blood samples were analyzed for serum paraoxonase-1 and erythrocyte Glutathione peroxidase activity in both groups and the severity of coronary artery disease was assessed using coronary angiographic scoring system based on vessel, stenosis and extent score. Patients with coronary artery disease showed significantly low paraoxonase-1 and Glutathione peroxidase activity compared to control subjects. However, according to the best cutoff value determined by receiver operating characteristic analysis for serum paraoxonase-1 (38µg/mL) did not show a significantly high sensitivity, negative predictive value and negative likelihood ratio when compared to erythrocyte Glutathione peroxidase (84.5U/gHb) in predicting the severity of coronary artery disease assessed by three angiographic scores. Glutathione peroxidase appears to be an accurate marker in ruling out major coronary vessel disease and luminal narrowing by atheroma.

**Keywords:** Glutathione Peroxidase, Paraoxonase, Vessel Score, Stenosis Score, Extent Score