

Relationship between pre and post-operative albumin concentrations and development of post-operative infections in Coronary Artery Bypass Graft (CABG) patients

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Low concentration of pre operative albumin increases the risk of development of infection following cardiac surgeries. However, this relationship has not been studied in Sri Lankan patients. The objective of this study was to investigate the association between pre and post operative albumin level and the development of post-operative infection in patients who underwent CABG (n=90) at Cardiothoracic unit of Sri Jayewardenepura General Hospital. The sample consisted of 60 males and 30 females with no pre-operative clinical signs of infection, inflammation, oedema or dilution. The pre-operative and post-operative (after 24 hours) serum albumin levels were analyzed (Konelab 20 analyzer). Infections in the surgical site (sternal and graft leg) and other infections (urinary tract, pneumonia and positive cultures from catheter tips) were recorded. The pre and post albumin concentrations ranged from 32.6–54.6 g/L and 31.4–52.7 g/L respectively. Twenty eight percent (28 %) of patients developed post operative surgical site and other infections following surgery and had pre and post albumin concentrations of 45.6 (\pm 5.4) g/L and 41.8 (\pm 4.6) g/L respectively. The contribution of albumin in the development of infections was studied by the Receiver Operative Characteristic (ROC) curve. The area under the curve of ROC for post-operative albumin and infections was 64.2% (p = 0.07). Using a post-operative albumin cut-off value of 40.0g/L, the test had a specificity of 84% and a sensitivity of 87% in detecting post-operative infections. Even within the normal range, a cut-off value of post-operative serum albumin of 41.5g/L can be used as a prognostic cut-off with relatively high specificity and sensitivity for detecting the possibility of developing post-operative infections. Therefore, correction of post-operative serum albumin concentration nearly up to upper limit of normal may be effective in reducing the post-operative infections in such patients.

Key words: Post-operative infection, Albumin

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