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| **A3085. Evidence That Presepsin is an Early Marker of Postoperative Infection After Cardiac Surgery** |
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| **[Introduction]** Postoperative infection remains one of the major complications of surgery. In particular, postoperative infection after cardiac surgery often becomes serious and life-threatening. Consequently, its early diagnosis and treatment are critically important. The diagnosis of postoperative infection is often delayed, however, due to the inflammatory marker rise that occurs in response to surgical stress. Thus, a marker that detects the early onset of postoperative infection is needed. Presepsin (PSEP) is a new marker of inflammation that is specific for bacterial infection and shows a rapid response. Although there have been several studies of the usefulness of PSEP in emergency and intensive care, there have been few reports of its utility in the perioperative period. In the present study, we investigated its value as an early marker of postoperative infection after cardiac surgery.  **[Method]** From February to October 2014, adults undergoing elective cardiac surgery with cardiopulmonary bypass were examined by PSEP on postoperative day (POD) zero. Exclusion criteria were preoperative infection and renal dysfunction. The aim of the study was to investigate the relation between the PSEP level on POD zero and the onset of postoperative infection during 30 days, in addition to other clinical parameters.  **[Result]** Seven of 28 patients included in this study developed postoperative infection as of surgical site infection (n=4), pneumonia (n=2), and urinary tract infection (n=1). The PSEP level (pg/ml) in the infected patients was significantly higher than that in non-infected patients (median; range) (995; 312-1603 vs 348; 67-1410, p<0.05). The risk factors (odd’s ratio; 95% confidence interval) for postoperative infection by univariate analysis were PSEP at POD zero (100pg/ml) (1.28; 1.03-1.60, p<0.05), duration of surgery (h) (1.63; 1.03-2.58, p<0.05), and duration of anesthesia (h) (1.67; 1.04-2.68, p<0.05). In contrast, white blood cell count and C-reactive protein on POD zero were not risk factors for postoperative infection. Multivariate analysis was not conducted due to the small sample size.  **[Discussion]** In this study, patients with higher PSEP levels on POD zero were at increased risk of postoperative infection after cardiac surgery. An early postoperative rise of the PSEP level might be a response to bacterial invasion, as the expression of PSEP is known to be more rapid than those of other known inflammatory markers, and to have greater specificity for bacterial infection. This suggests that postoperative infection risk is increased in patients with a high PSEP level at POD zero. If postoperative infection could be detected early in this way, and treatment started, outcomes after cardiac surgery might be improve.  **[Conclusion]** It is suggested that presepsin may be a useful predictor of postoperative infection after cardiac surgery. |

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