The Predictive Value of Intraoperative ST-segment Monitoring as a Marker of Myocardial Injury

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Abstract

***Aim**: To evaluate the usefulness of dynamic intraoperative ST-monitoring in high-risk patients comparing it to preoperative clinical assessment and concurrent biochemical markers of cardiac injury. **Materials and Methods**: Twenty-three patients clinically assessed as being at high risk for perioperative cardiac complications were recruited into this prospective, observational study in a public hospital. All had serial ECGs, cardiac enzymes and troponin-T measurements. The sensitivity, specificity, positive and negative predictive value of ST-segment changes in terms of predicting cardiac complications were calculated. We investigated the relationship between ST changes and biochemical markers of ischaemia and the predictive value of nonspecific (ASA) and specific (Goldman) clinical scores for cardiac complications. **Results**: When correlated with cardiac complications, ST-segment monitoring had sensitivity 45.4%, specificity 100%, positive predictive value 100% and negative predictive value 66.7%. The correlation with CK-MB and troponin T was sensitivity 16.7% and 25%, specificity 73.3% and 75%, positive predictive value 20% and 20%, and negative predictive value 68.8% and 80%, respectively. The percentage of patients with cardiac complications increased with poor Goldman and ASA clinical scores; 25%, 40%, 62.5% and 100% in Goldman risk index groups of 0-5, 6-12, 13-25 and >25, respectively; and 33.3% and 52.6% in ASA II and ASA III, respectively. **Conclusions**: This study demonstrates the importance of the anaesthesiologist preoperative assessment of cardiac risk. The probability that a patient with significant ST-depression will develop subsequent cardiac complications is 100%, which reflects its usefulness in this high-risk pre-selected sample. However, the test has a low sensitivity (45.4%).*

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