

BLOOD PRESSURE AND HEART RATE VARIABILITY IN RESPONSE TO A SURGICAL STIMULUS UNDER GENERAL ANESTHESIA AMONG ADULT FEMALE PATIENTS: A PRELIMINARY REPORT

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Blood pressure changes and heart rate variability are due to complex interactions between external stimuli and mechanisms of cardiovascular control. While blood pressure changes strongly correlate with target organ damage; variable heart rate is a powerful predictor of arrhythmia related complications in patients surviving the acute phase of myocardial infarction. Nevertheless, reports on the assessment of systolic blood pressure (SBP), diastolic blood pressure (DBP) and heart rate (HR) variations in response to a surgical stimulus under the conditions of general anaesthesia are not available in the literature. This study therefore, aims to assess changes in SBP, DBP and HR following an initial standard surgical stimulus such as skin incision, among adult, female patients during general anaesthesia. The relationship between these changes and the preoperative cardiovascular status is also analysed.

Standard mercury sphygmomanometre was used to obtain blood pressure. The pulse rate was calculated manually. Baseline measurements were taken the day before surgery. Test measurements were taken in the theatre during surgery.

The DBP and SBP increased between the second and fourth minute after the skin incision. However, between the fourth and eighth minute the SBP decreased whereas, the DBP increased from the fourth to the sixth minute and thereafter declined between the sixth and eighth minute. In the case of HR, an increase was observed before induction of anaesthesia as compared with baseline readings. It continued to increase even after induction and then two minutes after the skin incision it began to decrease. This trend continued and remained so for the next eight minutes, with minor variations.

These observations suggest that baseline SBP and DBP are predictive of SBP and DBP changes before induction of anaesthesia and the initial eight minutes after surgical skin incision. However, baseline HR does not provide a good predictive value of HR during the initial eight minutes after surgical skin incision.