An Observational Study of Skin Conductance Monitoring as a Means of Predicting Hypotension from Spinal Anaesthesia for Caesarean Delivery

David Law¹; Thomas Ledowski²; Michael Paech²; Roger Browning¹; James Preuss²; Stephan Schug²

¹. Department of Anaesthesia and Pain Medicine, King Edward Memorial Hospital for Women, Perth, Australia
². School of Medicine and Pharmacology, University of Western Australia, Perth, Australia

Background: Hypotension after spinal anaesthesia is a common and important complication at caesarean delivery. Skin conductance monitoring has been shown to predict post-spinal hypotension in elderly patients and may be a rapid, non-invasive means of predicting risk in the obstetric population.

Methods: Women having elective caesarean delivery were included in this observational pilot trial. Baseline data were obtained for blood pressure, heart rate and skin conductance variables before administration of spinal anaesthesia and at 1 min intervals for 20 min thereafter. Correlations between baseline data and minimum post spinal blood pressure were calculated, and the predictive value of baseline variables was estimated by use of receiver operator statistics.

Results: 40 women completed the study. Spinal anaesthesia was followed in most cases by a significant reduction from baseline in systolic blood pressure [0-9% n = 2 (5%), 10-20% n = 21 (52.5%), 20-30% n = 12 (30%), > 30% n = 5 (12.5%)]. Minimum systolic blood pressure was > 100 mmHg in 25 (62%), 80-100 mmHg in 12 (30%) and < 80 mmHg in 3 (7.5%) patients. Fasting times, spinal block distribution, baseline heart rate, blood pressure or baseline skin conductance did not predict post-spinal hypotension or neonatal outcome.

Conclusion: In contrast to a previous report in elderly patients, we were unable to demonstrate a significant relationship between baseline sympathetic tone, measured by skin conductance, and hypotension following spinal anaesthesia in women undergoing elective caesarean delivery.

Reference: T Ledowski, 2008