

## **Correlation between the Perfusion Index and Intraoperative Hypothermia: A Prospective Observational Pilot Study**

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**Background and Objectives:** We examined the association between the baseline perfusion index (PI) and changes in intraoperative body temperature during general anesthesia. The PI reflects the peripheral perfusion state. The PI may be associated with changes in body temperature during general anesthesia because the degree of redistribution of body heat from the central to the peripheral compartment varies depending on the peripheral perfusion state.

**Materials and Methods:** Thirty-eight patients who underwent brain surgery were enrolled in this study. The baseline PI and body temperature of the patients were measured on entering the operating room. Body temperature was recorded every 15 min after induction of anesthesia using an esophageal temperature probe. Univariate and multivariate logistic regression analyses were performed to identify the risk factors for intraoperative hypothermia.

**Results:** Eighteen patients (47 %) developed hypothermia intraoperatively. The baseline PI was significantly lower among patients in the hypothermia group ( $1.8 \pm 0.7$ ) than among those in the normothermia group ( $3.0 \pm 1.2$ ) ( $P < 0.001$ ). The baseline PI and body temperature were independently associated with intraoperative hypothermia (PI: odds ratio [OR], 0.270; 95% confidence interval [CI], 0.105–0.697;  $P = 0.007$ , baseline body temperature: OR, 0.061; 95% CI, 0.005–0.743;  $P = 0.028$ ).

**Conclusions:** This study showed that low baseline PI was the factor most related to the development of intraoperative hypothermia. Future studies should consider the PI as a predictor of intraoperative hypothermia.