Evaluation of perfusion index as a predictor of successful caudal block in pediatric patients: A prospective randomized study

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Background and Aims: Caudal block is among the most widely administered regional anesthesia in pediatric patients. The clinical signs and objective assessments are not fast and reliable enough to provide a good feedback. Perfusion index (PI) is considered as a sensitive marker to assess the efficacy of caudal block. We aim to assess PI as an indicator for success of caudal block in pediatric patients.

Material and Methods: Sixty pediatric patients scheduled for elective surgery of lower abdomen and below were included. Patients were randomly allocated into two groups (n = 30): Group 1 received caudal block after general anesthesia and Group 2 only received general anesthesia. PI, heart rate, mean arterial pressure, and anal sphincter tone (AST) were recorded at 5, 10, 15, and 20 min following induction of anesthesia.

Results: A persistent increase in the PI value was observed in Group 1 starting from 5 min till 20 min, as compared to Group 2, at all the time intervals. When mean PI was statistically compared between both the groups, it was found to be highly significant (P = 0.001). Group 1 patients have progressive laxity of AST which was found to be significantly different from Group 2 (P < 0.001).

Conclusion: We have found that both PI and AST are good indicators for assessing success of caudal block onset in pediatric patients but AST took slightly longer time (~20 mins). Therefore, we conclude that PI is simple, economical, and noninvasive monitor that predicts the caudal onset much earlier than AST.