Evaluation of perfusion index in pediatric trauma patients

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Background: The aim of this study is to investigate the effectiveness of perfusion index (PI) measured by non-invasive pulse oximetry in the evaluation of pediatric trauma patients and to show its correlation with pediatric trauma score (PTS).

Methods: Patients hospitalized in the pediatric intensive care unit due to trauma were examined between March 2017 and March 2018. Characteristic variables of the patients, Pediatric Index of Mortality 2 score, Pediatric Logistic Organ Dysfunction score, PTS, type of trauma, number of systems affected by trauma, mechanical ventilation, transfusion, hemoglobin, lactate, PI at admission, length of ICU stay, and prognosis were recorded.

Results: Ninety-one pediatric trauma patients were included in the study. The majority of the patients were male (64.8%), with a mean age of 99.47±71.27 months, the most common cause of trauma was an out of-vehicle traffic accident. There was a positive correlation between PI and PTS ($p<0.05$). In patients with PTS TS ≤8, the mean PI was 0.89, the standard deviation was 0.35; however, the mean PI was 1.77, the standard deviation was 0.95 in the group with PTS >8, and it was statistically significant ($p=0.000$).

Conclusion: PI can be used for non-invasive and rapid assessment of unstable patients separately or in combination with PTS in pediatric trauma patients.