Original Article

Prehospital Versus Trauma Center Glasgow Coma Scale in Pediatric Traumatic Brain Injury Patients

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Study Overview

• In this retrospective review, the authors sought to determine the Glasgow Coma Scale (GCS) reproducibility between prehospital providers and pediatric trauma hospital personnel in pediatric patients that presented with a traumatic brain injury.

• The authors found that prehospital and trauma center GCS scores varied significantly, particularly in TBI patients less than 3 years old and those with moderate TBI.
Background

• It has been shown that agreement between PH-GCS and TC-GCS is poor in adult patients with a GCS 9-12.

• The authors hypothesized that there would be poor agreement between PH-GCS and TC-GCS for patients less than 3 years and in all pediatric TBI patients with moderate GCS scores of 9-12.

• Over-triage of pediatric patients results in the overuse of limited resources and increased costs.
Methods

• Retrospective review of trauma registry and electronic health data (1994-2016) from a free-standing ACS level 1 pediatric trauma center.

• Ages 0-18

• 1711 pediatric patients met the inclusion criteria, 263 were under the age of 3.

• First documented EMS GCS and first documented trauma center GCS were compared.
Results

• PH-GCS and TC-GCS differed in 766 patients
  • PH-GCS was higher in 293 patients
  • PH-GCS was lower in 473 patients
• Overall agreement was less for children aged <3 years
  • PH-GCS was lower in 33.8% of patients <3
  • PH-GCS was higher in 19.4% of patients <3
Conclusion

• Prehospital and trauma center GCS scores did not agree; especially in children under the age of 3 years.

• Changes in neurological status may have contributed to the differences noted in the study. Further studies are needed.

• Trauma centers should use caution when using EMS GCS as a criteria for trauma activations.