Blood on the Go: Prehospital Transfusion Experience for Trauma Patients at North Estonia Medical Centre Foundation

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Background

In Estonia, injuries rank as the third leading cause of death, with bleeding-related deaths following head injuries as the second most common cause of mortality among trauma cases.¹ Haemorrhage could be clinically considering the assessed mechanism of the trauma, injuries and shock index – all of which are applicable variables in a prehospital setting.² Early diagnosis and management of bleeding, including the administration of blood products and tranexamic acid, are highly recommended in current guidelines.^{2,3} Nevertheless, the literature presents conflicting results regarding the benefits of prehospital transfusion.⁴ Estonia North Medical The Centre Foundation is a major trauma center in Estonia, offering ambulance services to a region encompassing nearly 800,000 inhabitants, including rural areas and small islands. Ambulance service includes an mobile support intensive with unit emergency or intensive care physicians. National legislation permits prehospital



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Results

(median on-scene time of 27 minutes (IQR 22–32 min) versus 28 minutes (IQR 26–35 min), respectively; p = 0.6. Additionally, no major transfusion reactions were identified.

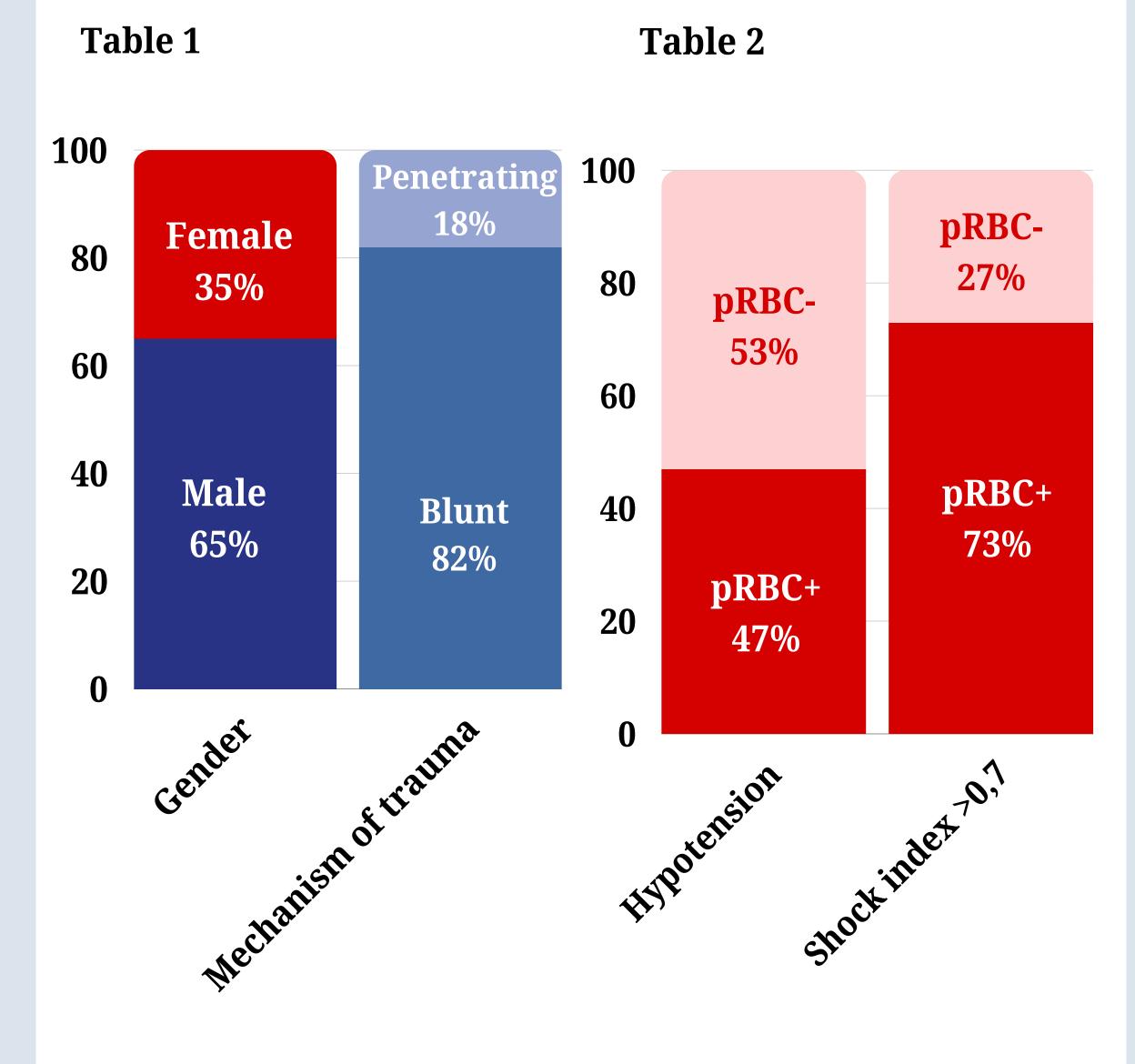
transfusion, and since 2020, intensive mobile units have been equipped with O negative packed red blood cells (pRBCs). The aims of this analysis are:

- To describe the demographic and clinical characteristics of trauma patients who received prehospital pRBC.
- To compare the on-scene time of ambulances between the pRBC+ and pRBC- groups.

Methods

This retrospective study received approval from the institutional ethics research committee. received Patients who prehospital pRBCs from February 2020 to April 2023 were identified from the hospital blood bank database. Non-trauma patients patients with incomplete medical and records were excluded from the analysis. For the control group, trauma patients requiring intensive mobile unit support and O pRBCs during negative emergency department (ED) stay were enrolled. These patients were identified through screening of all major trauma admissions during the respective time period prior to the introduction of prehospital pRBCs (January 2017–January 2020).

During the study period, a total of 33 patients received prehospital pRBC, with 17 of them experiencing major trauma. Among these patients, three received prehospital pRBC during traumatic cardiac arrest and resuscitation, while four received it during interhospital transfer. Median age of patients receiving prehospitally pRBC was 41 (37–55) years. Patients' data are depicted in Table 1 and Table 2. No significant differences were found in on-scene time between the



Conclusions

The observed frequency of patients requiring prehospital pRBC transfusion was relatively low. The shock index appears to be a superior indicator transfusion for requirement compared to hypotension. Despite our experience with prehospital limited no adverse effects were transfusions, documented. Additionally, there was no significant difference in on-scene time between the prehospital pRBC+ and pRBCgroups.

References

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