ICU
MANAGEMENT & PRACTICE

Prehospital Lyophilised Plasma Transfusion for Trauma-Induced Coagulopathy

Trauma-induced coagulopathy affects approximately 20 to 50% of patients with severe trauma. Its occurrence increases transfusion requirements, multi-visceral failure, and mortality. Blood transfusion is the primary therapy for trauma-induced coagulopathy. However, optimal modalities for plasma transfusion in a prehospital setting remain undefined.

Findings from the COMBAT (Control of Major Bleeding After Trauma)and PAMPer (Prehospital Air Medical Plasma)8 trials support the use of prehospital fresh frozen plasma for patients with blunt injuries, transport time exceeding 20 minutes, severe shock with higher lactate levels, traumatic brain injury, and moderate transfusion requirements.

The Prehospital Lyophilized Plasma (PREHO-PLYO) trial is a multi-centre, randomised clinical trial. Researchers aimed to determine whether prehospital transfusion of lyophilised plasma in patients at risk for haemorrhagic shock after trauma results in a lower incidence of trauma-induced coagulopathy at hospital admission compared with standard care with normal saline infusion.

The trial included multiple centres in France. One hundred and fifty patients with trauma at risk for haemorrhagic shock and associated coagulopathy were included and followed up for 28 days. Study patients received either plasma or standard care with normal saline infusion.

The primary outcome of the study was the international normalised ratio (INR) on arrival at the hospital. Secondary outcomes included the need for massive transfusion and 30-day survival. Prespecified adverse events included thrombosis, transfusion-related acute lung injury, and transfusion-associated circulatory overload.

One hundred and thirty-four patients were included in the analysis (68 in the plasma group and 66 in the control group). Median INR values were 1.21 in the plasma group and 1.20 in the control group. No significant differences were observed between the two groups in the need for massive transfusion, relative risk, or 30-day survival. There was also no significant difference in the rates of the prespecified adverse events in the two groups.

These findings show that in patients at risk for haemorrhagic shock and coagulopathy, prehospital transfusion of lyophilised plasma was not associated with any major differences in INR values vs standard care with normal saline infusion. While lyophilised plasma transfusion is a feasible and safe procedure for this patient population, there is a lack of evidence regarding its ability to prevent trauma-induced coagulopathy.

Source: JAMA
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