Early high-dose cryoprecipitate to reduce mortality in adult patients with traumatic haemorrhage: the CRYOSTAT-2 RCT with cost-effectiveness analysis

Nicola Curry,[1] Ross Davenport,[2] Helen Thomas,[3] Erin Fox,[4] Joanne Lucas,[5] Amy Evans,[5] Efthalia Massou,[6] Rupa Sharma,[5] Shaminie Shanmugaranjan,[3] Claire Rourke,[5] Alice Newton,[3] Alison Deary,[5] Nikki Dallas,[5] Chloe Fitzpatrick-Creamer,[5] Jeanette M Podbielski,[4] Charles E Wade,[4] Antoinette Edwards,[7] Jonathan Benger,[8] Stephen Morris,[6] Bryan A Cotton,[4] James Piercy,[2] Laura Green,[9,10] Karim Brohi[2] and Simon Stanworth[11,12*]

[1]Oxford University Hospitals NHS Foundation Trust, Nuffield Orthopaedic Hospital, Oxford, UK
[2]Centre for Trauma Sciences, Blizard Institute, Queen Mary University of London, London, UK
[3]NHS Blood and Transplant Clinical Trials Unit, Bristol, UK
[4]The University of Texas Health Science Center at Houston, Houston, TX, USA
[5]NHS Blood and Transplant Clinical Trials Unit, Cambridge, UK
[6]Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK
[7]Trauma Audit and Research Network, Salford Royal Hospital, Northern Care Alliance NHS Foundation Trust, Salford, UK
[8]Faculty of Health and Applied Sciences, University of the West of England, Bristol, UK
[9]Blizard Institute, Queen Mary University of London, London, UK
[10]NHS Blood and Transplant and Bart's Health NHS Trust, London, UK
[11]NHS Blood and Transplant and Oxford University Hospitals NHS Foundation Trust, John Radcliffe Hospital, Oxford, UK
[12]Radcliffe Department of Medicine, University of Oxford, Oxford, UK

[*]Corresponding author simon.stanworth@nhsbt.nhs.uk

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Plain language summary

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Plain language summary

Uncontrolled bleeding following injury is a leading cause of death and disability, killing over 12,000 people in the United Kingdom every year. People who have severe bleeding after injury often develop a problem with their clotting system that means that they tend to bleed more. One change after trauma is low levels of fibrinogen, a clotting protein normally circulating in the bloodstream. Fibrinogen acts as the 'glue' that holds a blood clot together. At low levels, blood clots do not form properly, and bleeding can continue. Cryoprecipitate is stored as a frozen type of blood component that is prepared from plasma after blood donation. It is rich in fibrinogen. This study investigated whether giving a high dose of cryoprecipitate transfusion as soon as possible after injury reduced death rates.

We studied people who required a blood transfusion following major injury due to trauma admitted at 26 hospitals in the United Kingdom and the United States of America. A total of 1604 people were allocated at random to one of two study groups. One group were given an early transfusion of high-dose cryoprecipitate in addition to standard treatments including other blood transfusions. The other group received the standard treatment alone.

Outcomes from 1531 participants were analysed. Among participants treated with the additional early cryoprecipitate, the death rate was 25.3% (192/760). In the standard treatment group, the death rate was 26.1% (201/771). There was no evidence that treating patients with early high-dose cryoprecipitate had an effect on the death rate. There were also no differences in side effects. The economic analysis shows that, overall, treatment costs and quality of life did not differ between patients who received early cryoprecipitate and patients who did not.

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