

1339 Haemoglobin Threshold for Red Blood Cell Transfusion in Traumatic Brain Injury. A Systematic Review and Meta-Analysis

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Background: Traumatic Brain Injury (TBI) is a significant and growing worldwide healthcare burden. Minimising brain hypoxia is important in preventing secondary brain injury. Anaemia is common in TBI patients but there is little evidence as to which haemoglobin (Hb) threshold transfusion should be considered in TBI patients.

Objective: This present systematic review and meta-analysis of randomised controlled trials aims to assess the effect of high versus low red blood cell transfusion thresholds on functional outcomes and quality of life in TBI patients.

Method: We searched Cochrane Central Register of Controlled Trials, MEDLINE, Embase, CINAHL, and Web of Science up to June 2020. We also searched clinical trial registers, conference proceedings, and reference lists from previous systematic reviews and included studies. We included randomised studies comparing high versus low Hb threshold for red blood cell transfusion in TBI patients. We assessed the following major outcomes: all-cause mortality, transfusion related adverse events and favourable outcome (Glasgow Outcome Scale, GOS).

Results: We included 3 RCTs involving 311 participants. Our analysis showed no difference in all-cause mortality (3-6 months) (OR 1.17 (95% CI 0.64 to 2.13)) and no difference in GOS (OR 1.10 (95% CI 0.65 to 1.85)) between transfusing red blood cells at 7g/dL or at 9/10g/dL in moderate to severe TBI.

Conclusions: There is no difference between a high and a low Hb threshold transfusion policy. However, considering the limitations in current evidence there is a need for future high quality randomised controlled trials.