The liberal use of platelets transfusions in the acute phase of trauma resuscitation: a systematic review.
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This systematic review examined the impact of an aggressive approach (higher PLT:RBC ratios) compared to restrictive PLT transfusions (lower PLT:RBC ratios) in the acute trauma resuscitation.

We systematically searched Medline, Embase, Web of Science, Biosis, Cochrane Central and Scopus to identify relevant randomized controlled trials (RCTs) and observational studies (OS) comparing 2 or more different PLT:RBC ratios in trauma resuscitation. We excluded studies using whole blood or systematically addressing the use of hemostatic agents. Two independent reviewers selected the studies, extracted data, and assessed the risk of bias using the Newcastle-Ottawa scale and a checklist of key methodological elements. Disagreements were solved by consensus or a third party. The primary outcome was mortality. Secondary outcomes were multiple organ failure (MOF), lung injury and sepsis.

From 6123 citations, 7 OS were included (n=4230 patients). No RCT was identified. All studies presented a low risk of bias and addressed confounders with multivariable regression or propensity scores. Four studies (n=1978) reported a decrease in mortality with higher PLT:RBC ratios in massive bleeding and one study observed no mortality difference (n=1181) in nonmassive bleeding. Two studies reported on the implementation of a massive transfusion protocol; one revealed a survival benefit (n=211). Of the 3 studies accounting for survival bias, 2 demonstrated a survival benefit (n=1300). Among 2 studies reporting on the secondary outcomes (n=854), one observed an increase in MOF with higher PLT:RBC ratios. Clinical heterogeneity and methodological limitations precluded the use of a meta-analysis.

There is insufficient evidence to strongly support the use of a specific PLT:RBC ratio for acute trauma resuscitation, especially considering survival bias and nonmassively bleeding patients. RCTs examining both safety and efficacy of liberal PLT transfusions are warranted.