

LETTER

# Management of bleeding following major trauma: is a target haemoglobin of 7 to 9 g/dl high enough?

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See related research by Spahn *et al.*, <http://ccforum.com/content/17/2/R76>

In the latest recommendations for the management of bleeding following major trauma, Spahn and colleagues recommend a target haemoglobin of 7 to 9 g/dl to initiate blood transfusion [1]. In their rationale the authors use a subgroup of trauma patients from the Transfusion Requirements in Critical Care study; however, patients with active blood loss were excluded from this trial.

Expressing a current opinion about transfusion and trauma patients, in 2006 McIntyre and Hebert wrote: 'It is important to put RBC [red blood cell] transfusions into the context of three main time frames, i.e. prehospital care, initial 24–48 h after admission to hospital and thereafter, because each frame has its own set of circumstances which may dictate the need for different timing, volume and rapidity of transfusions' [2]. To our knowledge, the only trial to evaluate a target haemoglobin in shock involved early goal-directed therapy in septic shock [3]. The early goal-directed therapy protocol included maintaining a haematocrit of 30% (haemoglobin at 10 g/dl). In the results, the early goal-directed therapy group had a significantly higher haematocrit than the control group and also received more transfusions.

Raising the target haemoglobin to 10 g/dl has two interesting effects: haemodilution is reduced, harmful in the present case; and the transfusion delay is decreased. Riskin and colleagues showed that reducing the transfusion delay may decrease the mortality rate [4]. For the first time, three studies suggest that transfusion may be associated with a reduced mortality rate [5].

The real beneficial effect of blood transfusion is probably that it gives time to stop the bleeding.

#### Competing interests

The authors declare that they have no competing interests.

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