

LETTER

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

Nicolas Morel^{*1}, François Delaunay¹ and Vincent Dubuisson²

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.

Author details

¹Emergency Department, Pellegrin Hospital, 33076 Bordeaux, France. ²Surgery Department, Pellegrin Hospital, 33076 Bordeaux, France.

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References

1. Spahn DR, Bouillon B, Cerny V, Coats TJ, Duranteau J, Fernandez-Mondejar E, Filipescu D, Hunt BJ, Komadina R, Nardi G, Neugebauer E, Ozier Y, Riddez L, Schultz A, Vincent JL, Rossaint R: **Management of bleeding and coagulopathy following major trauma: an updated European guideline.** *Crit Care* 2013, **17**:R76.
2. McIntyre LA, Hebert PC: **Can we safely restrict transfusion in trauma patients?** *Curr Opin Crit Care* 2006, **12**:575-583.
3. Rivers E, Nguyen B, Havstad S, Ressler J, Muzzin A, Knoblich B, Peterson E, Tomlanovich M: **Early goal-directed therapy in the treatment of severe sepsis and septic shock.** *N Engl J Med* 2001, **345**:1368-1377.
4. Riskin DJ, Tsai TC, Riskin L, Hernandez-Boussard T, Purtill M, Maggio PM, Spain DA, Brundage SI: **Massive transfusion protocols: the role of aggressive resuscitation versus product ratio in mortality reduction.** *J Am Coll Surg* 2009, **209**:198-205.
5. Vincent JL: **Transfusion triggers: getting it right!** *Crit Care Med* 2012, **40**:3308-3309.

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*Correspondence: nicolas.morel@chu-bordeaux.fr

¹Emergency Department, Pellegrin Hospital, 33076 Bordeaux, France
Full list of author information is available at the end of the article