



Letter to the Editor

Research for transfusion safety- priority of administration safety



ARTICLE INFO

Keywords:
Transfusion safety
Research

ABSTRACT

In Trasci recently various articles issued opinions where research for transfusion safety should be heading. A majority of them concentrated of production and standardization of the perfect and safe blood product in the future. However, the way the product is used by clinicians should be supported first to increase administration safety since the risks from inadequate administration exceeds the risk of product associated harm by far. Technical or computerized solutions have been tried in pilots but are far from marketability. Research efforts are needed to secure the clinical path of already very safe blood products.

Dear Editor,

The articles “Transfusion medicine: A research agenda for the coming years” from Dr. Blumberg [1], “An open call out on continual quality/safety improvement strategies in transfusion science and medicine” and “Reflections on current status of blood transfusion...” from Dr. Seghatchian [2,3] in previous issues of Trasci address intended future research topics for transfusion safety.

Although the outlined topics clearly are important, I would consider another focus in transfusion medicine much more urgent. There are alarming signals of a low administration safety in the use of blood products that have been constantly reported by hemovigilance systems such as the SHOT in UK (<https://www.shotuk.org/2018-annual-shot-report-published/>) or other critical incident reporting systems [4,5]. It is not acceptable that a high quality blood product with little inherent harm risk to the recipient causes public anxiety. Health reports in public media focus in waste of blood donations by unnecessary use and overdose causing donor shortage in Austria and Germany [6]. Blood transfusion is losing its life-saving reputation.

Since incorrect component use, incorrect dosing and the number of near misses are increasing steadily over the years (SHOT [7]), efforts to increase product safety should be second priority for a research agenda. Further improvements of blood production methods are important but should be considered less mandatory. The risk of administration errors in transfusion medicine in an assumed frequency of 1:1000 administrations [8] should raise more attention than the variety of improvements in product safety with an associated risk of transmitted infection (i.e. 1:1,7 Mio for hepatitis B or 1:7 Mio for HIV) or of TRALI (1:100 000) [9].

Systems that increase administration safety by concepts of scanner based process control have been suggested, developed, and used during pilot trials long ago [10,11]. Error avoidance by integration of technology into bedside practice and demonstration of improved performance will improve care for patients in need of transfusion therapy [12,13]. However, due to a minor priority research activity in this sector decreased tremendously. Transfusion medicine should think better.

Furthermore, a chance arises for the parallel research and development of technical systems of process control in blood unit production i.e. by radio frequency identification devices (RFID) as well as

administration control.

Therefore, in Trasci as a journal with a focus on transfusion related science, I would recommend a “Call Out Programme for Administration Safety Systems in Blood Transfusion”.

References

- [1] Blumberg N, Cholette JM, Cahill C, Pietropaoli AP, Winters S, Phipps R, et al. Transfusion medicine: a research agenda for the coming years. *Transfus Apher Sci* 2019(August). <https://doi.org/10.1016/j.transci.2019.08.015>. pii: S1473-0502(19)30160-0. [Epub ahead of print].
- [2] Seghatchian J. An open call out on continual quality/safety improvement strategies in transfusion science and medicine. *Transfus Apher Sci* 2019(August). <https://doi.org/10.1016/j.transci.2019.08.014>. pii: S1473-0502(19)30159-4. [Epub ahead of print].
- [3] Seghatchian J. Reflections on current status of blood transfusion transplant viral safety in UK/ Europe and on novel strategies for enhancing donors/recipients healthcare in promising era of advanced cell therapy/regenerative medicine. *Transfus Apher Sci* 2019;58(4):532–7.
- [4] Frietsch T, Thomas D, Scholer M, Fleiter B, Schippl M, Spannagl M, et al. Administration safety of blood products - lessons learned from a national registry for transfusion and hemotherapy practice. *Transfus Med Hemother* 2017;44(4):240–54.
- [5] Vossoughi S, Perez G, Whitaker BI, Fung MK, Rajbhandary S, Crews N, et al. Safety incident reports associated with blood transfusions. *Transfusion* 2019;59(9):2827–32.
- [6] Gehring U. Bad Blood- Dangerous Blood Transfusions [Documentation]: ARD Germany; 2015. Feb. 26. German Public TV, <https://www.ardmediathek.de/ard/player/Y3JpZDovL3N3ci5kZSSxNTEzNTc3MA/>.
- [7] Annual SHOT report 2018 [internet] 2018 Available from: <https://www.shotuk.org/2018-annual-shot-report-published/>.
- [8] Vamvakas EC, Blajchman MA. Transfusion-related mortality: the ongoing risks of allo-geneic blood transfusion and the available strategies for their prevention. *Blood* 2009;113(15):3406–17.
- [9] Vossoughi S, Gorlin J, Kessler DA, Hillyer CD, Van Buren NL, Jimenez A, et al. Ten years of TRALI mitigation: measuring our progress. *Transfusion* 2019;59(8):2567–74.
- [10] Schmidt-Hieber M, Schuster R, Nogai A, Thiel E, Hopfenmuller W, Notter M. Error management of emergency transfusions: a surveillance system to detect safety risks in day to day practice. *Transfus Apher Sci* 2006;35(2):125–30.
- [11] Wenz B, Mercuriali F, AuBuchon JP. Practical methods to improve transfusion safety by using novel blood unit and patient identification systems. *Am J Clin Pathol* 1997;107(4 Suppl 1):S12–6.
- [12] Dzik WH. New technology for transfusion safety. *Br J Haematol* 2007;136(2):181–90.
- [13] Murphy MF, Kay JD. Barcode identification for transfusion safety. *Curr Opin Hematol* 2004;11(5):334–48.

Thomas Frietsch

Interdisziplinäre Arbeitsgemeinschaft für Klinische Hämotherapie IAKH, An den Lahnbergen, 35033, Marburg, Germany

E-mail address: thomas.frietsch@urz.uni-heidelberg.de, <http://www.iakh.de>