Clin Chem Lab Med 2012;50(11):1871–1872 © 2012 by Walter de Gruyter • Berlin • Boston. DOI 10.1515/cclm-2012-0349

Editorial

Error reporting in transfusion medicine: an important tool to improve patient safety

Massimo Franchini

Transfusion medicine consists of multiple process steps involving both the blood donors and the recipients. As it starts with the recruitment of donors and ends with the monitoring of adverse infectious and non-infectious events in both donors and recipients (i.e., hemovigilance), it involves several persons including healthcare aides, secretaries, phlebotomists, transporters, laboratory technicians, nurses and physicians (1). Thus, the transfusion process is particularly complex and every professional involved at each step plays a critical role in ensuring the patients' safety, i.e., in getting the right blood to the right patient (2, 3).

The main strategies to minimize the risk of potentially fatal acute hemolytic transfusion reactions (HTR) due to ABO-incompatible blood include the avoidance of unnecessary transfusions through the rational use of evidence-based transfusion guidelines and the implementation of patient identification procedures by the addition of information technologies (4). The latter, which include identification bracelets with alphanumeric codes, barcode bracelets read by handheld scanners and bedside wireless computers, radiofrequency identification systems and mobile fingerprint sensors, have greatly improved the transfusion safety in the last decade (5–8). However, the most important strategy for reduction and prevention of ABO-incompatible transfusion has been probably the implementation of surveillance systems worldwide (9) and significant reductions in these avoidable deaths over the last decade have been observed in countries with a well developed hemovigilance system, such as the UK (Serious Hazard Of Transfusion, SHOT) and France (2, 10).

The importance of error identification and reporting has already been highlighted throughout the total testing process of conventional laboratory diagnostics (11–15), and is further strengthened for improving transfusion safety in the study by Dr. Priti and colleagues which is published in this issue of *Clinical Chemistry and Laboratory Medicine* (16). Indeed, the authors developed an interesting and complete transfusion-related adverse event reporting in their hospital in North India, which permitted 285 transfusion-related events to be collected during the 1-year study period. As expected, the great majority of them were near-miss events (95%), while acute HTR due to ABO-incompatible transfusion occurred in one in every 60,309 component units. Importantly, the analysis of single near-miss events permitted the more critical phases of the transfusional process to be identified (i.e., the pre-analytical phase) and to plan corrective actions. This is the case, e.g., of the introduction of the patients' blood group check from a second sample to prevent wrong blood in the tube (WBIT) errors.

In conclusion, we agree with the authors when they outlined that the implementation of an efficient hemovigilance system is necessary to undertake corrective and preventive actions to reduce errors and, finally, improve transfusion safety.

Conflict of interest statement

Author's conflict of interest disclosure: The author stated that there are no conflicts of interest regarding the publication of this article.
Research funding: None declared.
Employment or leadership: None declared.
Honorarium: None declared.

References

1. Stainsby D. Errors in transfusion medicine. Anesthesiol Clin N Am 2005;23:253–61.
2. Franchini M. Errors in transfusion medicine. Clin Chem Lab Med 2010;48:1075–7.
3. Pagliaro P. Errors in transfusion medicine are not only misidentifications of the recipients, but also pre-analytical and analytical errors. Clin Chem Lab Med 2010;48:1053–4.
4. Vamvakas EC, Blajchman MA. Blood still kills: six strategies to further reduce allogeneic blood transfusion-related mortality. Transf Med Rev 2010;24:77–124.
5. Dzik WH. Technology for enhanced transfusion safety. Hematol Am Soc Hematol Educ Program 2005;1:476–82.
6. Pagliaro P, Turdo R, Capuzzo E. Patients' positive identifications systems. Blood Transfus 2009;7:313–8.
7. Pagliaro P, Rebulla P. Transfusion recipient identification. Vox Sang 2006;91:97–101.
8. Dzik WH. New technology for transfusion safety. Br J Haematol 2006;136:181–90.
9. de Vries RR, Faber JC, Trengers PFW; for the Members of the Board of the International Haemovigilance Network. Haemovigilance: an effective tool for improving transfusion practice. Vox Sang 2011;100:60–7.
10. Vamvakas EC, Blajchman MA. Transfusion-related mortality: the ongoing risks of alogeneic blood transfusion and the available strategies for their prevention. Blood 2009;113:3406–17.
11. Plebani M, Lippi G. Closing the brain-to-brain loop in laboratory testing. Clin Chem Lab Med 2011;49:1131–3.

12. Krouwer JS, Cembrowski GS. Towards more complete specifications for acceptable analytical performance – a plea for error grid analysis. Clin Chem Lab Med 2011;49:1127–30.
13. Cooper G, DeJonge N, Ehrmeyer S, Yundt-Pacheco J, Jansen R, Ricós C, et al. Collective opinion paper on findings of the 2010 convocation of experts on laboratory quality. Clin Chem Lab Med 2011;49:793–802.
14. Lippi G, Chance JJ, Church S, Dazzi P, Fontana R, Giavarina D, et al. Preanalytical quality improvement: from dream to reality. Clin Chem Lab Med 2011;49:1113–26.
15. Lippi G, Guidi GC, Mattiuzzi C, Plebani M. Preanalytical variability: the dark side of the moon in laboratory testing. Clin Chem Lab Med 2006;44:358–65.
16. Priti E, Ehenoy V, Anupam V, Sachan D. Error reporting in transfusion medicine at a tertiary care centre: a patient safety initiative. Clin Chem Lab Med 2012;50:1935–43.

Massimo Franchini
Dipartimento di Medicina Trasfusionale ed Ematologia,
Azienda Ospedaliera Carlo Poma,
Mantova, Italy
E-mail: massimo.franchini@aopoma.it