Appropriateness of blood transfusion and physicians' education: a continuous challenge for Hospital Transfusion Committees?

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Blood transfusion is an essential part of patients' care. The transfusion of blood components plays a fundamental role in the management of various pathologies and is sometimes a life-saving treatment. Blood is an expensive and limited resource. Over the last 20 years there has been a progressive increase in demands for this product, mainly as a result of the advances in oncohaematological therapies and the increase in major surgery.

Blood transfusion does, however, carry a potential risk of acute or delayed complications and transfusion-transmitted infections and should be prescribed only to treat conditions associated with significant morbidity or mortality that cannot be prevented or managed effectively by other means.

The need to ensure the appropriateness of blood transfusion has long been recognised.

Hospital Transfusion Committees (HTC) have been created in different countries to oversee all aspects of the transfusion of blood products, including its appropriateness, within individual institutions. The approaches used to achieve this goal have varied both historically and between nations. The principles of these approaches are common, and the use of a HTC or Blood Utilisation Committee has been promoted worldwide at one time or another.

According to the World Health Organisation (WHO), "a transfusion committee should be established in each hospital to implement the national policy and guidelines and monitor the use of blood and blood products at local level.

The committee should have authority within the hospital structure to determine hospital policy in relation to transfusion and resolve any identified problems.

The main functions of a hospital transfusion committee include:
- developing systems for the implementation of the national guidelines within the hospital;
- liaison with the blood transfusion service to ensure the availability of required blood and blood products at all times;
- liaison with the relevant department to ensure a reliable supply of intravenous replacement fluids and other alternatives to transfusion at all times;
- developing a hospital blood ordering schedule;
- developing hospital standard operating procedures for all steps in the transfusion process;
- training all hospital staff involved in transfusion;
- monitoring the usage of blood and blood products within the hospital;
- monitoring and investigation of severe adverse effects or errors associated with transfusion, taking any corrective and preventive action required and reporting through the haemovigilance system to the national committee on the clinical use of blood."

In the United States, a hospital-based peer review mechanism to ensure the appropriateness of blood transfusion therapy has been a requirement for accreditation by the College of American Pathologists and by the Joint Commission on Accreditation of Hospitals since 1982.

Until fairly recently, HTC in the United Kingdom were set up on a voluntary basis, which along with the lack of infrastructure and resources left them powerless, with no real authority. The Health Service Circular (HSC 1998/224) called for the establishment of HTC by March 2000 and a hierarchy of Transfusion Committees was established in 2001. At present, the network includes the National Blood Transfusion Committee and a framework of Regional Transfusion Committees and HTC.

The role of the HTC set up in the above-mentioned countries can be described as the promotion of best transfusion practice through the enhancement of awareness and education, facilitation of policy development, and monitoring and review of the use of blood and blood products and adverse incidents involving these products.
in other European Union countries. It is based on blood transfusion services completely integrated with the National Health Hospital System. This hospital-based system, peculiar to Italy, has contributed to the development of a transfusion medicine service that pays great attention to the clinical appropriateness of transfusion therapy. A local organisation with a multidisciplinary approach for the promotion and monitoring of appropriateness of blood product usage has been considered a necessity since the early 1980s. In addition, there has been a significant degree of attention to appropriateness of transfusion practices since the early 1990s, when the first national guidelines were issued promoting the reduction of allogeneic blood transfusion. However, Italian HTC were officially set up under the ministerial decree of 1st September, 1995.

In Italy, HTC are formed by representatives of the main clinical units with a significant transfusion activity, the Hospital’s executive management and pharmacy, the blood bank, nursing staff, the blood providers (donors’ associations) and the blood users (patients’ associations).

The HTC performs a number of functions in ensuring safe and appropriate transfusion. As in other countries the Italian HTC avail themselves of specialists in several fields who share the guidelines and practices for the clinical use of blood components and plasma derivatives and who also audit clinical transfusion practices with the aim of improving the blood transfusion process by ensuring it keeps abreast with the continuous technical and scientific advances.

According to Italian legislation, a functional HTC should have a major impact on local rates of inappropriate transfusion, as well as on clinical governance, haemovigilance and safety of the transfusion medicine process.

The various professionals involved in transfusion therapy, together with the active participation of Hospitals’ executive management, should, therefore, use the HTC as a means of sharing knowledge and practices. Hospitals’ executive management should be strongly motivated and committed to the achievement of quality and safety in health services as well as to the management of clinical risk.

However, despite the clear and binding role laid down in the law in reality the situation in hospitals at a national level is still largely unsatisfactory. In fact, the limited efficiency and efficacy regarding monitoring and governance of the appropriate use of blood products within the national health system is widespread. Therefore, a set of measures was set up by the Ministry of Health and the National Blood Centre through the 2008 National blood and blood-derivative self-sufficiency plan and re-specified in 2010. These provisions had the objective of updating the tasks and objectives of HCT with the aim of raising the level of motivation of the professionals involved and of planning and implementing a monitoring system based on specific indicators to verify not only their functioning but above all the results obtained through their activities, as provided for in Article 17 of Law 219/2005.

This Article confirms the need to ensure firstly that HTC are set up and secondly that they function efficaciously and efficiently. In addition, under the same Article HTC are redefined as Hospital Committees for the Appropriate Use of Blood and Cord Blood Stem Cells.

In addition to policy development, education and audit are the two main instruments in possession of HTC to optimise blood use. Audit is a continuous process aimed at ensuring best practice in line with accepted evidence. It involves the evaluation of ongoing practice and its comparison to set standards. When such standards are not met, appropriate changes are implemented and their effect monitored. Because evidence suggests that information on the appropriateness of transfusion is difficult to obtain retrospectively, audit should normally be performed prospectively.

Generally speaking, clinicians receive little or no formal training on the clinical indications for blood transfusion therapies during their time at medical school. HTC can promote best practice by providing continuing professional education and monitoring performance by clinical audit and peer review. Regularly notifying clinicians of their performance is an additional strategy that may improve transfusion practice.

In a very interesting article in this issue of Blood Transfusion, Sana Ansari and Arpad Szallasi describe a really effective experience in increasing the appropriateness of red cell transfusion at their institution (Monmouth Medical Center, Long Branch, NJ, USA). It is worth mentioning that healthcare institutions in the USA must review blood transfusion practices and adverse outcomes in order to receive payments from the Centres for the Medicare/Medicaid programme.
The authors involved the local Blood Utilisation Committee and successfully combined monitoring and review of blood usage, physicians' education and implementation of new guidelines. A system of notifying clinicians of their performance was also set up, which involved sending a letter of reminder of the new guidelines when shared transfusion criteria were not met. The authors conclude that blood utilisation may be improved "by combining evidence-based transfusion triggers with physicians' education".

In fact, as stated by Mark T. Friedman in a recent editorial, "possibly the major obstacle to making transfusion practices more consistent and in line with published guidelines and evidence-based medicine is the overall lack of knowledge regarding transfusion medicine shared by clinicians across specialties as evidenced by published data. This evidence would seem to indicate that medical education in transfusion medicine continues to lag behind. Thus, no matter what the conclusions of future studies on transfusion efficacy turn out to be, there will be little impact on blood utilization overall if we continue to fail to educate the end users".

We, therefore, completely agree that "it is only by reversing this trend in medical education that we, as transfusion medicine specialists, will begin to see improvements - and consistency - in blood transfusion practices".

Really, one of the major challenges faced by HTC is ongoing professional education of health care givers involved in transfusion. Appropriate knowledge of the indications for blood product transfusion and safety should be the main drivers of educational interventions directed at these people.

Undoubtedly, these interventions can play a role in blood conservation by significantly influencing the appropriateness of usage of blood components. However, the transfusion medicine community should be aware that there is the danger that, without adequate support, resources, and real authority, HTC will neither be truly functional nor have a strong enough impact on transfusion practice.

References

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