TRANSFUSION POLICIES IN ANEMIA

Haemovigilance in developing countries

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The word haemovigilance is derived from the word pharmacovigilance, which covers activities and systems to collect information in medicinal products, especially for adverse drug reactions in humans. Haemovigilance, initially created in France in the beginning of 90s has Greek and Latin roots: “haema”: blood and “vigilans”: paying special attention. Haemovigilance concerns blood components. Pharmacovigilance concerns plasma derivatives such as clotting factor concentrates, immunoglobulins, albumin and other fractionated products. Since 1993, in European legislation plasma derivatives are considered to be pharmaceuticals, and the manufacturers have to comply with the European regulations on pharmacovigilance.

Transfusion reports from US and United Kingdom showed that most of the incidents were caused by clerical errors. Not only identification but also administrative errors also plays an important role. In France, by a law in 1994, the first definition of hemovigilance was introduced. Various number of definitions have been written since then. In the European Blood Directive, it is defined as a group of organized surveillance procedures relating to serious, adverse or unexpected events or reactions in donors or recipients, and the epidemiological follow-up of donors. The definition given by the European Haemovigilance Network (EHN) is the one most widely used. “Haemovigilance is a set of surveillance procedures covering the entire transfusion chain (from the donation of blood and its components to the follow-up of recipients of transfusions), intended to collect and assess information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent the occurrence or recurrence of such incidents” [1].

Haemovigilance and the European Blood Directive

On February 8, 2003 the European Blood Directive 2002/98/EC was published and came into force. In this Directive, Chapter V is dedicated to haemovigilance and there are two operating articles dealing with haemovigilance; “Article 14: Traceability

- Member States shall take all necessary measures in order to ensure that blood and blood components collected, tested, processed, stored, released and/or distributed on their territory can be traced from donor to recipient and vice versa. To this end, Member states shall ensure that blood establishments implement a system for identification of each single blood donation and each single blood unit and components thereof enabling full traceability to the donor as well as to the transfusion and the recipient thereof. The system must unmistakably identify each unique donation and type of blood component. This system shall be established in accordance with requirements referred to in Article 29(a). With regard to blood and blood components imported from third countries, Member states shall ensure that the donor identification system to be implemented by blood establishments permits an equivalent level of traceability.

- Member States shall take all necessary measures in order to ensure that the system used for the labelling of blood and blood components collected, tested, processed, stored, released and/or distributed on their territory complies with the identification system referred to in paragraph 1 and the labelling requirements listed in Annex III.
Data needed for full traceability in accordance with this Article shall be kept for at least 30 years”.

“Article 15: Notification of serious adverse events and reactions

- Member States shall ensure that any serious adverse events related to the collection, testing, processing, storage and distribution of blood and blood components which may have an influence on their quality and safety, as well as any serious reactions observed during or after transfusion which may be attributed to the quality and the safety of blood and blood components are notified to the competent authority and blood establishments have in place a procedure accurately, efficiently and verifiably to withdraw from distribution blood or blood components associated with the notification referred to above.
- These serious adverse events and reactions shall be notified in accordance with the procedure and notification format referred to in Article 29(i)”.

European haemovigilance network (EHN)

Five countries took the initiative in 1998 to work together in the field of haemovigilance: Belgium, France, Luxembourg, Portugal and The Netherlands and the EHN was born. Later, Austria, Denmark, Finland, Greece, Ireland and the United Kingdom joined to the EHN and Canada, Croatia, Norway and Switzerland were adopted as associate members.

EHN was established to increase blood safety at a European level and has the following objectives [2,3]; (a) favour exchange of valid information between members, (b) increase rapid alert and/or early warning between the members, (c) encourage joint activities between the members, (d) undertake educational activities in relation to haemovigilance, (e) standardization of processes and forms, (f) comparison and analysis of data, generated by national systems, (g) assistance in the implementation of the European Blood Directive, in relation to legal provisions.

This European network focuses on two systems; Rapid Alert/Early Warning system (RAS) and a reporting system for adverse reactions to blood component transfusion. Reporting forms have been developed in order to standardize the information process needed and to take appropriate action to prevent the occurrence or recurrence of adverse events.

All EHN activities can be followed on the EHN Web-site (www.ehn-org.net). Ten Members States of the EU – Belgium, France, Denmark, Greece, Ireland, Portugal, Luxembourg, Finland, Netherlands, and United Kingdom—are 10 full members of EHN. Non-EU Members States as Australia, Canada, Switzerland and Norway are associate member, and Brazil, Spain and Romania have expressed their wish to join as associate members.

Haemovigilance systems around the world

There are significant differences in haemovigilance around the world, in terms of definition, organizational schemes, state of development and implementation [4]. Although mostly developed in EU countries, there are some countries, even basic traceability causes a problem. Most of these systems are on a volunteer basis but there are a few which the report of the reactions are mandatory like the one in France.

Basically the existing systems can be classified according to their legal status (mandatory vs. voluntary), their field of application (all events vs. very serious reactions), their organization (centralized vs. less decentralized), and their financing. These two programmes represent two different models for other countries.

In Germany, the labile blood components are considered as medicinal products and come under the German Drug Law. According to the national legal provisions covering medicines, side effects have to be reported according to the rules of pharmacovigilance. Nevertheless it should be mentioned that the recent German Transfusion Law also established haemovigilance as a separate entity.

Little is known about the haemovigilance systems of the new EU countries by 2004.

French haemovigilance system

In 1993 by law, in France, haemovigilance became a national system of surveillance and alert, from blood collection to the follow-up of the recipients, gathering and analysing all adverse events of blood transfusion in order to prevent their recurrences. In France, unlike the other European countries, the reporting of all adverse reactions is mandatory, regardless of their severity and their transfusion imputability. The law states that “anyone, doctor, chemist, dental surgeon, midwife or nurse, who notices an unexpected or untoward effect due or possibly due to a blood product, must report it at once” [5]

The agencies that take part in haemovigilance system in France: The French Control Authority on Health Products (AFSSaPS), -The French National Blood Service (EFS) and The Institute of Sanitary Surveillance (INVS). The National French Blood Agency was disbanded and the control of blood transfusion activity was transferred to the AFSSaPS, effective for haemovigilance in 1999 [5,6].

The French Haemovigilance Network is built on three levels [1,7]. Local level with 2000 public and private hospital correspondents and one correspon-
dent in each of the 18 regional blood centres helped by a colleague mostly physicians or pharmacists, in each distribution site. Every public hospital must also have an Haemovigilance and Transfusion Safety Committee, with technical, medical and administrative members. Regional level with 25 haemovigilance regional coordinators that are physicians located in each French administrative region, under the authority of the prefect and regional director of social and sanitary affairs (DRASS). They supervise investigations and implementation of corrective actions, when required. At national level AFSSaPS defining haemovigilances main features, leading and coordinating the actions of the different actors, taking the appropriate measures to ensure transfusion safety and passing on to the Ministry of Health all the epidemiological information necessary to take action.

The global traceability of blood products improved from 95% in 2000, to 99% in 2003. On average 7000 adverse reactions are reported each year, from shivers or pruritus to death. Currently, more than 68,000 adverse reactions are in the national database. In 2003, 6933 adverse reactions were reported, among which 2911 (42%) had a strong association with transfusion. There were 1898 acute (65%) and 1013 (35%) delayed adverse reactions. More than 50% of acute reactions were allergic and 22% were FNHTR. Almost all the 1013 delayed adverse reactions (98.5%) were red cell immunization. Seven viral infections (6 HCV and 1 CMV) with strong transfusion imputability was recorded [5].

**Turkey**

In general, the blood system is decentralized with high degree of more than 300 blood banks, most of them are associated with a hospital. So it is not surprising not to set up a national centralised and efficient surveillance system. Legislations and regulations are not ready yet.

**China**

The Chinese Government has decided to undertake a major upgrade of the system around blood transfusion. In the coming years there will be important changes towards a comprehensive system that will include haemovigilance.

**References**