Blood safety in European countries with limited resources

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During the last decades, attention focused more and more on blood transfusion and a safer blood product. Policies turned to generally accepted standards and recommendations, for increasing blood safety, at international level, with national reflection. In this respect, the World Health Day theme of the year 2000 was blood safety, with the well-known logo: "Safe blood starts with me", underlining the key role of the average individual in the safe blood reserve and supply.

European countries with limited resources had to adjust quickly to the continuously changing scientific panorama, but also to the local political, economical and therefore social changes that occurred in the same period. If one would have to compare the present situation, to what was existing 10 years ago, the effort and results that have been obtained are remarkable.

At the beginning of the 90s, Blood Transfusion centers where generally hospital based, with very few exceptions, where such institutions were existing on their own. The National Blood Transfusion Service was a conglomerate of many small centers, with governmental budgeting and a very low cost-effectiveness. There was no legal frame for the system to function, nor a National Program developed locally. Blood donation was generally paid, a few volunteer non-remunerated donors being registered although, but mainly for family donations. The higher number of blood donors was due to the political side of the act, being considered in some ways an ideological obligation (generally managed through the National Red Cross).

Blood was collected into glass bottles, the recipients being sterilized and reused many times, while testing was incomplete, performed with locally produced reagents, not complying even to basic quality requirements, as considered today.

Whole blood was used in general, only 20 to 40% blood units were processed into labile blood components, as red cell concentrate (sometimes washed), cryoprecipitate and plasma. Separation techniques where performed in completely open circuit, with low level of standardization or GMPs. Outdated plasma used for fractionation in local existing facilities, was the source for albumin, IM immunoglobulin and anti-D specific globulin, lyophilized plasma, as well as the production of blood grouping reagents, dried thrombin etc. A constant shortage of coagulation factors had to be considered, the only treatment available for haemophiliacs was cryoprecipitate or fresh frozen plasma.

The heterogeneous development of countries in Central and Eastern Europe during the last 10 years was reflected also on their National Blood Transfusion Services. Increasing differences appeared after 1990, linked to the social, economical and political problems of the area, wars and natural calamities, the new countries emerging out of unions and the sudden opening to information and setting up of own standards and priorities considered.

Efforts started to concentrate on blood safety, with national authorities commitment, so that now, a legal frame is present in almost all European countries (or seriously taken into consideration) ensuring the regulatory basis for the National Blood Transfusion Service to function. It is interesting to note that in most of the cases where legislation on blood collection and use exists, systems are generally organized on a centralized basis, with potential options, more or less open to local strategies.

Blood donation is apparently non-remunerated in many countries of the area, with a legal biological compensation in food and days off for the gift of blood. In the few cases where blood donation is still paid, an issue for voluntary blood donation, at least using a transient phase as previously specified, is considered. Some benevolent blood donors associations have already been constituted, with an increasing role to play in this action.

Blood collection was switched to plastic bags. Nevertheless, there are still places, where due to a major limitation of resources and supplies, sterilized glass bottles are also used. Fortunately, these cases are rare and related to limited areas. Testing is generally performed in conformity with international recommendations, for ABO blood grouping and transmissible disease, using standard kits.

The fractionation index of whole blood turned to more than 80% in certain areas, increasing the use of labile blood components. Naturally, for a clear outcome, the percentage of labile blood products has to be related to the general blood collection figure. Several types of labile blood products are available, including pediatric units in most of the countries of the area.

Plasma for industrial use is fractionated either locally (merged fractionation -plants), or outside the country based upon contractual agreements. The storage capacities for frozen industrial plasma are still a problem for many Blood Transfusion Services in the region.

It is important to underline the fundamental changes in structure and strategy have been initiated, backed up by international support programs (EC, CE, WB, WHO), for increasing blood safety and availability.

Major progress has been achieved, but many problems are still unsolved. And generally speaking, we face many common problems, such as:

- self sufficiency by limitation of needs,
- constant decrease of voluntary blood donors,
- need for plasma fractionation facilities/ issues,
- accurate haemovigilance feed-back,
- cost efficiency of introducing high cost-procedures, such as leukodepletion, NAT testing.

Due to the high sensitivity and high cost of the whole transfusion medicine chain, it is of major importance to have stable decision-making mechanisms and properly informed decision-makers. Setting up the example of scientific evidence based decisions will avoid wrong allocation of already limited funds and will enable a reassessment of priorities to be followed.

Extensive pro-donation campaigns are needed for public information and education, with media support. Altogether with continuous training programs for the BTS staff (to comply and constantly update quality requirements), as well as guidelines and specific training for clinicians in transfusion medicine will enable a new understanding, at different levels, of the cost-benefit challenge in terms of blood safety.