

Organization of an integrated autotransfusion program

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Blood transfusion "per se" is no therapeutical procedure in most cases but a supportivemeasurement. Since it has risks which can not be neglected it has to be handled very critical.

One way to avoid the risks of allogeneic blood transfusion is the use of autologous in stead of allogeneic blood. However the succes of an autotransfusion program is dependant of the organization. Though autotransfusion consists of several components like intraoperative cell salvage, hemodilution and preoperative donation, I will focus on preoperative donation since this needs the most extensive organization. Autologous preoperative donation only makes sense if the patient has time enough to replace the erythrocytes he has donated.

The means that predonation must be done at least two weeks before operation, and this means that all doctors and the patient involved must plan in advance.

The driving force for preoperative blood donation mostly comes from the patient because he fears the risks of allogeneic blood.

In Germany there exists a decicion of the supreme court, that any patient who is going to be transfused, must be informed about the risks and must be informed about the possibility to donate autologous blood. But it is necessary to inform the patient in time, otherwise he will not be able to donate the right numbers of blood needed, for the special operation. Normally the general practioner is the first of discuss the problem. The surgeon, when discussing operation modalities has to decide how much blood will be necessary. The blood banker will draw the blood, fractionate and store it until it is delivered to the operation room. The anaesthesiologist will give the blood back to the patient. All these specialists must work together and only if all are cooperative the system of autologous transfusion will work.

Blood for transfusion is a drug (in Germany) that holds true even for autologous blood. Any person who prepares a drug and delivers it must have a permission.

According to the transfusion law which was established 1998 iti is easier to get the permission for autolougos blood than for allogeneic but you must have it. Many of the small hospitals lack the permission, so they must cooperative with a transfusion service.

Autologous blood has to fulfill the criteria of a normal blood unit that means it must be handled the same way. It will be tested for infectious diseases HIV, Hepatitis B, and C; at Least the patient will be tested once before a donation period. If the tests are positiv for HIV or HCV blood will not be taken or if necessary stored under special security conditions.

As a standard; units will be separated in RBC and plasma which is frozen immediately. But since there is rarely a real need of plasma for coagulation disorders, and since a great deal of autologous units are not needed at all; there is a growing discussion weather it would be advantagous to store autologous blood as whole blood. Especially after the establishment of inline filter for leukoreduction an autologous leucodepleted whole blood can be produced which has better storage conditions than a normal whole blood and which is cheaper than a separated unit. Autologous blood must be stored in a separate refrigerator and all precautions must be done to avoid mixing up. Documentation is very essential especially in the patients report, to avoid the risk that the patient will get a homologous unit as long as autologous units are still in reserve. Crossmatching is not necessary, but we do a major blood grouping on the unit before

delivery; so that we can compare it with the blood group of the patient. A bedside test will be done before transfusion. When the blood is not needed it has to be discarded. Crossover to other patients is not allowed in Germany.

But you have to make a contract with the patient regarding the waste. Otherwise the patient can ask you for this plasma for the time till is outdated (up to 2 years) and your storagecapacity will be full very soon.

For a full success of the program all criteria must be considered, but this is not different to other medical therapeutic procedures.