REVIEW

Autologous Blood Transfusion 'The Safest Type of Blood for Transfusion'

By G. P. Bhagwat*

The term autologous transfusion describes "any transfusion of blood or components that have originated with the intended recipient"[1]. It includes donation and storage of blood for future need (predeposit) and the salvage and return of blood lost during and after surgery.

Autologous techniques date back to the early 19th century and were used for years mainly for those patients with rare blood types. In recent years these techniques became popular when questions arose about the risk of blood transfusion. The primary reason for the initial popularity was the appearance of Acquired Immune Deficiency Syndrome (AIDS). Screening tests for antibodies to Acquired Immune Deficiency Syndrome have now made the blood supply of donated blood safe, although some units may remain contaminated because antibodies may not have developed if infection was recent. But the interest in autologous transfusion has kept rising as this eliminates not only the risk of AIDS and other potentially fatal infections that can result from transfusions of contaminated blood, but also the risk of Hepatitis (Non-A, Non-B), Cytomegalovirus, Syphilis and other immunologic reactions of the homologous transfusion.

* Consultant Pathologist
I/C Central Blood Bank
Salmaniya Medical Centre
State of Bahrain

In general, the autologous blood transfusion is encouraged in patients undergoing elective surgeries who are likely to require transfusion. Although most autologous transfusion programmes involve collecting, storing and transfusing red cells, other components such as fresh frozen plasma, platelets, granulocytes and stem cells can also be predonated for subsequent use.

Autologous transfusion supplements the community's blood supply in several ways. First, the autologous donor has less need for homologous blood. In one study, predeposited blood was sufficient to meet the transfusion requirements of 54% of patients undergoing cardiovascular surgery[2]. In another, predeposited blood provided over 85% of transfusion given to patients undergoing elective plastic and/or orthopaedic procedures[3]. Second, unused predeposited autologous blood can be put into regular inventory if the donor patient meets standard criteria. Finally, it is suggested that physicians transfuse less blood to patients who have autologous blood available, rarely transfusing more than the amount previously donated and thus sparing the total supply[3].

In recent years the physicians, blood bank specialists, allied health professionals and the public have become increasingly aware of autologous donation programmes in United States. In December 1986, the American Association of Blood Banks (AABB)

in their public opinion survey found that nearly three-fourth (73%) of the 1000 respondents in USA had heard of autologous donation process, and that 80% of those surveyed would prefer to use this option if faced with an opration. During the past five years, the number of predeposited autologous programmes offered by AABB institutional members have more than doubled. In 1985 through the AABB services, over 80,000 units of blood were collected from 745 autologous transfusion programmes. The American Medical Association in late 1986 endorsed autologous process and AMA's council on scientific affairs called it "the safest type of blood for transfusion"[4].

Age limits and other restrictions for potential blood donors are not applicable to autologous collections, where the major determinant is the patient's physical condition. Recent studies have shown that autologous transfusions are safe in children and pregnant women particularly in second trimester of an uncomplicated pregnancy. Autologous donations are extremely valuable in managing pregnancies in women with antibodies against high incidence antigens, both to treat potential haemolytic disease of the new born and to provide adequate supplies of blood for the mother. It is recommended that donations be separated by approximately 7 days and that the last unit be collected 72 hours or more before surgery. Supplementation of iron may be necessary in donors undergoing frequent phlebotomies.

Heart disease, hepatitis, drug therapy and other conditions that often prevent some one from donating blood to others do not preclude autologous blood donation. The absolute contraindication for autologous transfusion is bacteraemia because bacteria may proliferate in stored blood even at temperatures of 1–6°C.

Although many patients undergoing elective surgery are capable of donating blood prior to their operation, and despite its advantages to patient and blood centres, autologous transfusion is not widely used. This may be due partly to ready availability of homologous blood, but most such apathy stems from lack of enthusiastic promotion by blood bankers, lack of information in the general medical community and paucity of data demonstrating the effectiveness of predonations. Since requests for presurgical autologous donations usually originate with the surgeon or the attending physician, the primary focus of autologous recruitment efforts should be the medical community[1].

REFERENCES

1. American Association of Blood Banks; Technical Manual 1985;359–367(9 ed).

2. Cuello L, Vasquez E, Perez V, Raffucci FL. Autologous blood transfusion in vascular surgery. Transfusion 1967;7:309–315.

3. Silvergleid AJ. Augologous transfusions, experience in a community blood centre. J Am Med Assoc 1979;241:2724–2725.

4. American Association of Blood Banks; News brief 1987;10(5).