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GLOBAL
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GUIDELINES FOR TREATMENT
OF ACUTE BLOOD LOSS

Global Programme on AIDS

Acute transfusion



WORLD
HEALTH
ORGANIZATION

Guidelines for treatment of acute blood loss

Introduction

Concern about the transmission by blood transfusion of the human immunodeficiency virus (HIV), the causative agent for AIDS, is a reminder that transfusion can be dangerous. Physicians therefore have a responsibility to be sure that any transfusion is clearly indicated and that benefits outweigh the risks.

Ideally blood is provided by a blood centre able to carry out the procedures necessary for ensuring that it is safe for transfusion. However, less favourable situations may be found in outlying hospitals. Moreover, component preparation may not be feasible (i.e. plasma, cryoprecipitate and platelets may not be available) and plasma derivatives (e.g. albumin) may not be affordable.

These guidelines therefore relate only to the use of whole blood and plasma expanders in treatment of acute blood loss, nearly always due to serious injuries, gynaecological and obstetric complications or gastrointestinal haemorrhage.

Therapeutic options

The amount of blood lost and the patient's clinical condition will determine the urgency of treatment. A loss of up to 20% of the blood volume is generally tolerable in healthy adults. A 20-30% volume loss requires volume replacement. More than 30% volume loss may lead to shock. This requires urgent volume replacement and may require blood.

The critical decision involves use of plasma expanders* instead of blood. Plasma expanders are often preferable. They can be immediately available, are relatively inexpensive and do not have certain of the dangers associated with use of whole blood (disease transmission, immunological incompatibility). In addition, blood is rarely necessary in the initial stages of treatment of hypovolemia.

Plasma expanders are of two classes - crystalloids and colloids.

- **Crystalloids** (e.g., physiological saline) can effectively correct hypovolemia, even in massive injuries, but the volume administered must be about three times the estimated blood loss. Frequent monitoring is necessary because diffusion into extravascular spaces may occur within 30-60 minutes.
- **Colloids** (e.g. hydroxy-ethyl-starch, dextran or gelatin) are retained within the circulation for longer periods (4-8 hours). They are potentially life-saving, but the user must be familiar with the product being used.

Whole blood should *not* be the *first consideration*, for three reasons:

- Volume replacement is more urgent than red cell replacement;
- Delay is inevitable with blood transfusion (blood collection, typing, crossmatching, etc.);
- There are unavoidable dangers associated with blood transfusion.

Blood transfusion should be avoided if possible.

Any transfusion which is not indicated is contraindicated.

* See World Health Organization document LAB/81.5 "Use of plasma volume substitutes and plasma in developing countries", for further details.

These guidelines are issued by the World Health Organization's Global Programme on AIDS (GPA) and the Unit of Health Laboratory Technology (LAB), and have been developed with and are endorsed by the League of Red Cross and Red Crescent Societies.