

*Review Article***Acute normovolemic hemodilution****Ibrahim A. Youssef, Moatasem M. Alredy, Josef Z. Attia
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Adequate volume replacement during major surgeries is mandatory in order to avoid organ dysfunction and death⁽¹⁾. The hazards related to homologous blood transfusion are well known, and might include: hypothermia, coagulation problems, hyperkalemia, hypocalcemia, allergic reactions, acute lung injury, hemolytic and non-hemolytic reactions, and transmitted infections⁽²⁾.

Although multiple measures are performed to increase the safety of donated blood and/or products, autologous blood remains the safest source for blood transfusion⁽³⁾. Autologous blood donation may be performed by either: pre-deposit autologous transfusion (The patient donates blood 3–5 weeks before surgery to be used intraoperatively), intraoperative acute normovolemic hemodilution, or intraoperative red blood cell salvage⁽⁴⁾.

Acute normovolemic (isovolemic) hemodilution (ANH) is a blood conservation technique which involves intraoperative removal and storage (at room temperature) of blood from a patient, just before or shortly after the induction of anesthesia, with simultaneous adding of a replacement volume of crystalloid and/or colloid⁽⁵⁾. This blood is transfused again to the same patient when intra-operative blood loss is controlled, or when necessary⁽⁶⁾.

ANH is indicated when blood loss is expected to be more than 1 or expected to exceed 20% of the patients' blood volume⁽⁷⁾.

The American Association of Blood Banks guidelines recommend that intraoperative or postoperative autotransfusion should be performed in surgeries where a large amount of bleeding (more than 20% total volume) is anticipated⁽⁸⁾.

In summary, compared with allogeneic blood transfusion, ABT has irreplaceable advantages such as avoiding allergies, immunosuppression, hemocytolysis and other adverse reactions. It is a safe, effective and affordable method of blood transfusion⁽⁹⁾.

References

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