

THE “SEVILLE” CONSENSUS DOCUMENT ON ALTERNATIVES TO ALLOGENEIC BLOOD TRANSFUSIONS: UPDATE IN CARDIAC SURGERY

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Background and objectives: Allogeneic blood transfusion (ABT) is an increasingly scarce and expensive resource, and is not risk free. In the last decades, there has been increasing interest in the development and use of different alternatives to allogeneic transfusion (AAT), sometimes without the appropriate scientific evidence to support their generalized use. The Seville's consensus statement (1) was prompted by the need for developing an evidence-based guideline on the indications and use of AAT. Here, we update and expand this consensus statement in regard to cardiac surgery.

Expert panel and methodology: The 20 members of the expert panel responsible for the elaboration of this document were appointed by five national medical societies of haematology, anaesthesiology and intensive care, who endorsed the conclusions of the panel. *The primary outcome variable was the reduction in the number of either transfused allogeneic units or transfused patients.* Level of evidence (I – IV) of selected papers and grade of recommendation (A, B, C, D, or E) were given for each topic, according to Delphi's methodology.

Highlight of strategies to reduce ABT in cardiac surgery.

Reduction of blood loss: *Recombinant activated FVII (rFVIIa)* may be beneficial in controlling postoperative bleeding after cardiac surgery (Grade D). *Aprotinin* is particularly indicated in patients on aspirin and repeat operations (Grade A). *Tranexamic acid* reduces the number of transfused units and the percentage of transfused patients (Grade A), whereas there is no clear evidence for a beneficial effect of *epsilon-amino-caproic acid* and *desmopressin*. *Fibrin sealants* reduce perioperative blood loss and ABT volume (Grade C).

Stimulation of erythropoiesis: Preoperative oral or intravenous *iron* corrects anaemia and reduces the number of transfused units and the percentage of transfused patients (Grade E). Perioperative administration of *recombinant human erythropoietin* to anaemic patients reduces the frequency and volume of ABT (Grade C).

Non-pharmacological strategies: *Preoperative autologous blood donation (PABD)* reduces the number of transfused units and the percentage of transfused patients (Grade D). The administration of rHuEPO in patients with moderate anaemia facilitates PABD (Grade C). *Perioperative cell salvage (CS)* reduces the number of transfused units and the percentage of transfused patients (Grade B). However, PABD and CS contribution to ABT reduction is decreased when a transfusion protocol is adopted. The small contribution of *acute haemodilution techniques* to ABT reduction is virtually eliminated when associated to a transfusion protocol or to other blood sparing measures. *Off-pump surgery* (Grade A) and *modified ultrafiltration* (Grade C) are also efficacious in decreasing perioperative blood loss and ABT volume.

(1) *The <<Seville>> Consensus Document on Alternatives to Allogenic Blood Transfusion. Med Clin (Barc). 2006; 127 (Supl.1):3-20.*