Prophylactic plasma transfusion

Review findings show uncertainty for the utility and safety of prophylactic FFP use. This is due to predominantly very low-quality evidence that is available for its use over a range of clinically important outcomes, together with lack of confidence in the wider applicability of study findings, given the paucity or absence of study data in settings such as major body cavity surgery, extensive soft tissue surgery, orthopaedic surgery, or neurosurgery. Therefore, from the limited RCT evidence, we can neither support nor oppose the use of prophylactic FFP in clinical practice [1)].

Prophylactic transfusion of plasma in severe traumatic brain injury without intracranial hemorrhage has not been demonstrated to improve outcome. In all situations of product transfusion, patients should be closely observed for signs of volume overload and the development of transfusion-related acute lung injury. The benefit of product transfusion should always be weighed against the risk of a transfusion-related complication [2)].

West et al. in 2011 reviewed the literature in an attempt to clarify best clinical practice with regard to this issue. Although the activated partial thromboplastin time and prothrombin time-INR are useful laboratory tests to measure specific clotting factors in the coagulation cascade, in the absence of active bleeding or a preexisting coagulopathy, their utility as predictors of overall bleeding risk is limited. Several studies have shown an imperfect correlation between mild elevations in the INR and subsequent bleeding tendency. Furthermore, FFP transfusion is not always sufficient to achieve normal INR values in patients who have mild elevations (< 2) to begin with. Finally, there are risks associated with FFP transfusion, including potential transfusion-associated [disease] exposures as well as the time delay imposed by laboratory testing and transfusion administration prior to initiation of procedures. The authors propose that the current concept of a “normal” INR value warrants redefinition to make it a more meaningful clinical tool. Based on their review of the literature, the authors suggest that in a hemodynamically stable patient population there is a range of mildly prolonged INR values for which FFP transfusion is not beneficial, and is potentially harmful. [3)]

In 2006 a paper presented the recommendations of the Agence Française de Sécurité Sanitaire des Produits de Santé (AFSSaPS; French Safety Agency for Health Products). A panel of experts reviewed and graded the literature on platelet transfusions; recommendations were formulated. Threshold platelet counts (PC) for transfusions in the perioperative context have not been clearly defined and should be determined by the existence of hemorrhagic risk factors. In the case of commonly practiced invasive procedures, the recommendation is to transfuse in order to achieve PC > 50,000 x microL-1. In the absence of platelet dysfunction, regardless of the type of surgery, the standard hemorrhagic risk threshold for surgery is 50,000 x microL-1. It has not been proven that the risk threshold is different according to the type of surgery. For neurosurgery and ophthalmologic surgery involving the

posterior segment of the eye, a PC of 100,000 x microL-11 is required. For axial regional anesthesia, a PC of 50,000 x microL-11 is sufficient for spinal anesthesia; a PC of 80,000 x microL-11 has been proposed for epidurals. During massive transfusion, prophylactic platelet infusion cannot be recommended beyond a loss of two blood volumes in less than 24 h (Professional Consensus). As for the therapeutic transfusion of plasma and/or platelets, as much as possible, platelet deficit should be documented with test results (PC and fibrinogen) before transfusing. In the event of bleeding, platelet transfusion may precede plasma infusion. However, although this recommendation has been the subject of several professional consensus agreements, it is not based on any randomized studies. Threshold PC for perioperative transfusions have not been clearly defined and most recommendations are the result of a professional consensus [4)]. [5)].

References

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