

EVICEL fibrin sealant and bloodless protocol in orthopaedic surgery: Clinical evidence and cost-analysis-Italian experience at Humanitas Research Hospital.

Authors: Martorelli F., Scardino M., D'Amato T., Gurgone A.

Publication Date: 2017

Abstract:

Introduction: Blood transfusion and haemostasis are becoming important aspects of preoperative planning and intraoperative decision making in orthopaedic surgery. Humanitas Research Hospital (ICH) uses a new patient blood management (PBM) protocol. Perioperative strategies include the use of autologous blood donation and administration of erythropoietin and iron, intraoperative use of tranexamic acid, intraoperative and postoperative blood salvage, and the EVICEL fibrin sealant (human fibrinogen and high concentration of human thrombin, Johnson & Johnson, Ethicon) that improves haemostasis and reduces the volume of blood loss in postoperative. Objectives: The potential role and cost saving obtained from use of EVICEL in the PBM protocol to control blood loss, avoid blood transfusions and reduce length of hospital stay in patients undergoing revision THA or TKA and patients with coagulopathy. Methods: In a retrospective observational study, we evaluated two different groups of patients undergoing revision THA or TKA: one group was treated with EVICEL and the other group with the same protocol but without fibrin sealant. The outcomes measured were numbers of patients exposed to allogeneic red cells, amount of blood/plasma transfusions, and the number of hospital length of stay. An economic model was quantified the cost saving of EVICEL at ICH. Results: Results showed that application of EVICEL reduces the number of transfused RBC and plasma, postoperative haemoglobin loss, and days of hospital stay in these particular orthopaedic procedures and patients. In the hospital cost analysis, EVICEL predicts resource reduction with average cost savings of 1676 per patient. Conclusion: Overall, the results

suggest that EVICEL is efficacious in reducing both postoperative blood loss and hospital stay. The protocol with EVICEL produces clinical appropriateness and cost savings.