

# **Evicel and bloodless protocol in orthopaedics surgery clinical evidence and cost-analysis : Italian experience humanitas research hospital.**

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## **Abstract:**

Objectives: Blood transfusion and hemostasis are becoming an important aspect of preoperative planning and intraoperative decision making in orthopaedic surgery. Total hip arthroplasty (THA), place patients at risk of significant blood loss, which can result in the need for transfusion, risk of postoperative anemia and infection, and increase hospital stay. Humanitas Hospital (ICH) use a new protocol "without blood" perioperative strategies include the use of autologous blood donation and administration of erythropoietin; intraoperative measures include acute normovolemic hemodilution, anesthesia, use of tranexamic acid, intraoperative and postoperative blood salvage, specialized cautery, and a new topical hemostatic agents (EVICEL). Evicel is a fibrin sealant (fibrinogen and high concentration of thrombin) hemostatic agent, facilitates hemostasis, reduce the volume of blood loss in postoperative. The potential role and cost saving generated from use of EVICEL in the "protocol without blood" to control blood loss, number of avoid blood transfusions and reduction of length of hospital stay in patients undergoing THA revisions. Methods: was evaluated in a retrospective observational controlled study in patients undergoing THA revision: one group was treated with EVICEL and a control group with the same protocol but without EVICEL. The outcomes measured (t test, Wilcoxon test, Chi-square test) were: number of patients exposed to allogeneic red cells, amount of blood transfusions, and the number of length of stay in hospital. An economic model was quantified the cost saving of EVICEL in ICH. Results: preliminary results showed that application of EVICEL reduce number of transfused RBC, postoperative haemoglobin loss, and

days of hospital stay. In the hospital cost. analysis EVICEL predicts resource reduction with average cost-savings of 1.227 per patient. Conclusions: Overall, the results suggest that EVICEL are efficacious in reducing both post-operative blood loss, and hospital stay The protocol with EVICEL produce clinical appropriateness and important cost savings for hospital.