

Peri-Operative Patient Specific Blood and Anemia Management in Elective Total Joint Replacement Patients



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CLINICAL RELEVANCE

This new peri-operative blood and anemia management program is efficient, effective, low cost, and safe in the timely identification and treatment of anemia in surgical patients.

BACKGROUND

Recognizing the challenge of preoperative anemia prevalence of 25-30% in elective total joint replacement surgery, an average Hgb loss of 3-4 grams/procedure and a 40% national transfusion average for total joint replacement patients with 2 units of red cells or more given per transfused patient, the authors collaborated to develop a new, patient-centric, peri-operative blood and anemia management program.

OBJECTIVE

Our goal is to diminish the transfusion rates which in turn will lower peri-operative complications, shorten the length of hospital stay, lower readmission rates and positively impact the overall cost of care for total joint replacement patients.

METHODS AND MATERIALS

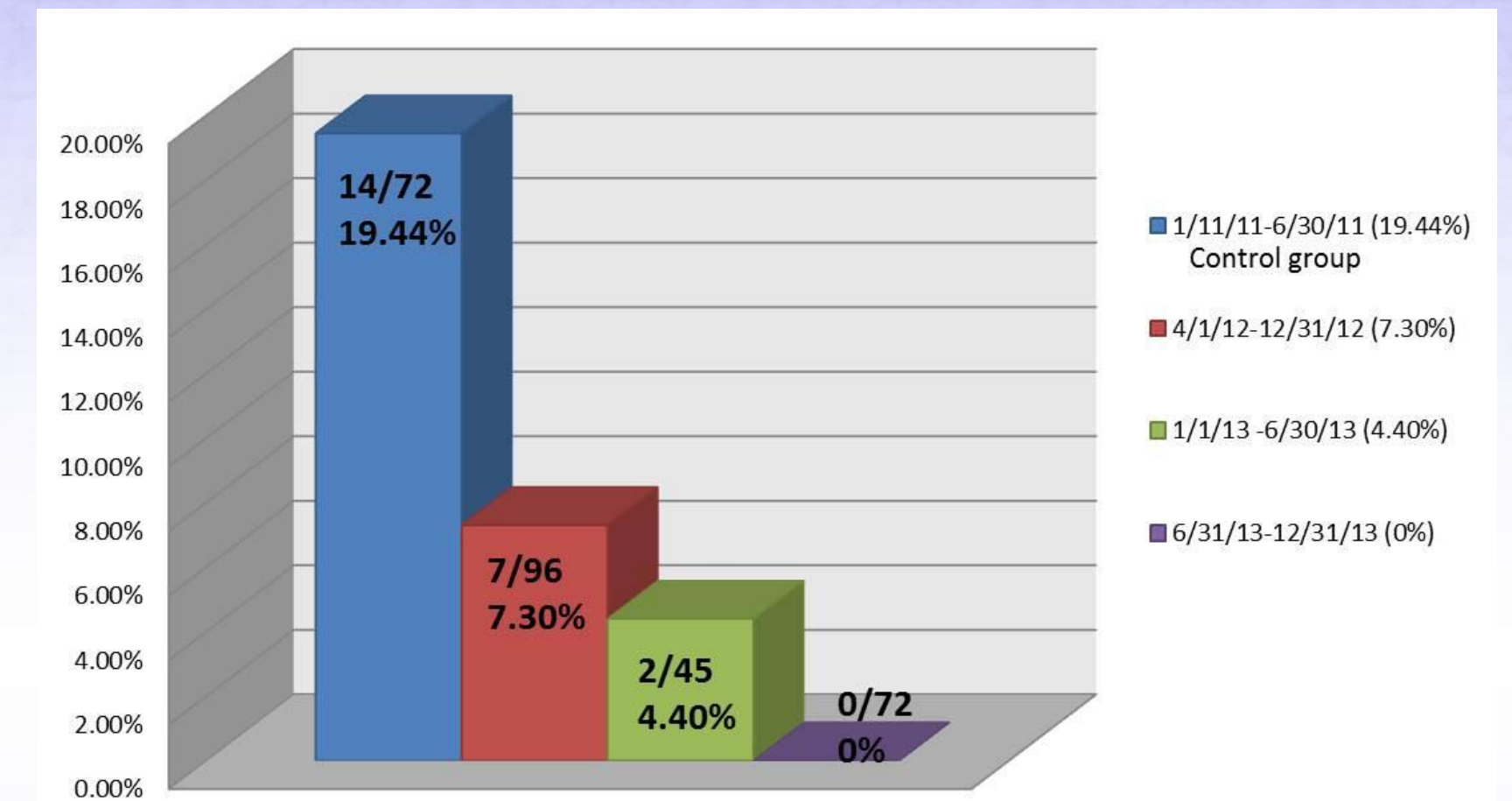
From April 1, 2012 – December 31, 2013, 242 patients underwent an elective total knee and hip replacement by a single surgeon. 213 patients (128 females & 85 males with the average age of 67) met the criteria for enrollment into a new peri-operative blood and anemia management pilot program and were compared to a historic control group of 72 consecutive patients of the same surgeon undergoing the same procedures from January 1 – June 30, 2011.

Features of the pilot program include:

- 1) Identifying preoperative anemia at least 2 weeks prior to the surgical date using a non-invasive quick spot-check test at the time of surgery scheduling
- 2) Additional standard lab testing on patients with Hgb <13.0
- 3) Peri-operative treatment plan communicated to patient, surgeon, and referring doctor
- 4) Anemia corrected prior to surgery using IV Iron Sucrose (Venofer) 300 mg in 2 or 3 doses and in selected cases erythropoietin (Procrit) 40,000 U in 2 doses
- 5) Hemoglobin and reticulocyte count of all treated patients documented on day of surgery
- 6) Inpatient blood management strategy communicated to treating physicians
- 7) The transfusion rate and the number of red blood cell units transfused was compared to the historic control group.

RESULTS

The control group transfusion rate was **19.44% (14/72)**. The pilot group transfusion rate was **4.2% (9/213)**, representing a substantial reduction of transfusion need. In addition, the number of red blood cell units per transfused patient was reduced from 2.07 units in the control group to 1.0 units in the pilot group.



CONCLUSION

The new peri-operative patient specific blood and anemia management program worked well for our total joint replacement patients. The transfusion need was greatly reduced by 79.31% when compared to the historical control group without complications related to anemia treatment via medications and/or reducing red cell transfusions.

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