

Dashboard Design to Evaluate for Severity of Post-Tonsillectomy Hemorrhage after Implementation of Ibuprofen

Authors: Jorge A. Gálvez, MD; Pamela Mudd, MD; Teresa Giordano, DNP, CRNP, CORLN; Ralph Wetmore, MD; Lisa Elden MD, MSc, FRCS(C), FAAP; Allan F. Simpao, MD; Arul Lingappan, MD; Mohamed Rehman, MD; David Friedman, MD; Abbas Jawad, PhD; Luis Ahumada, MSCS

Introduction: Many studies have sought to determine the relationship between ibuprofen or NSAID use and post-tonsillectomy hemorrhage rates. Few studies have evaluated the relationship to increased severity of bleeding associated with ibuprofen use.

Methods: Retrospective case-control study to analyze outcome data through database query and data acquisition. Inclusion criteria: all patients undergoing either tonsillectomy or tonsillectomy and adenoidectomy at a single tertiary pediatric hospital. Exclusion criteria include patients who underwent the primary procedure at an outside hospital.

Results: Database acquisition was used to identify frequency of patients undergoing tonsillectomy-requiring re-exploration for control of post-operative hemorrhage and it's association with ibuprofen. 8,901 patients were identified as having undergone tonsillectomy (or adenotonsillectomy) between January 20, 2011 and June 30, 2014. Overall, 257 (2.8%) patients presented with postoperative hemorrhage and required control of hemorrhage in the operating room. There does not appear to be an increased risk of hemorrhage requiring re-exploration associated with use of ibuprofen; 2.81% vs 2.87%; (OR= 1.063 (0.818-1.376), p=0.3403); however, there was a trend for increased severity of hemorrhage using transfusion rates as a surrogate (OR 3.35 (0.935-14.9), p=0.0331).

Conclusion: The risk of hemorrhage is not increased with use of post-operative ibuprofen. However, there was a trend toward increased prevalence of patients requiring blood transfusion after a tonsillectomy. The number of patients requiring blood transfusion was so small (13 out of 257 re-explorations) that this association is not very specific and difficult to interpret.

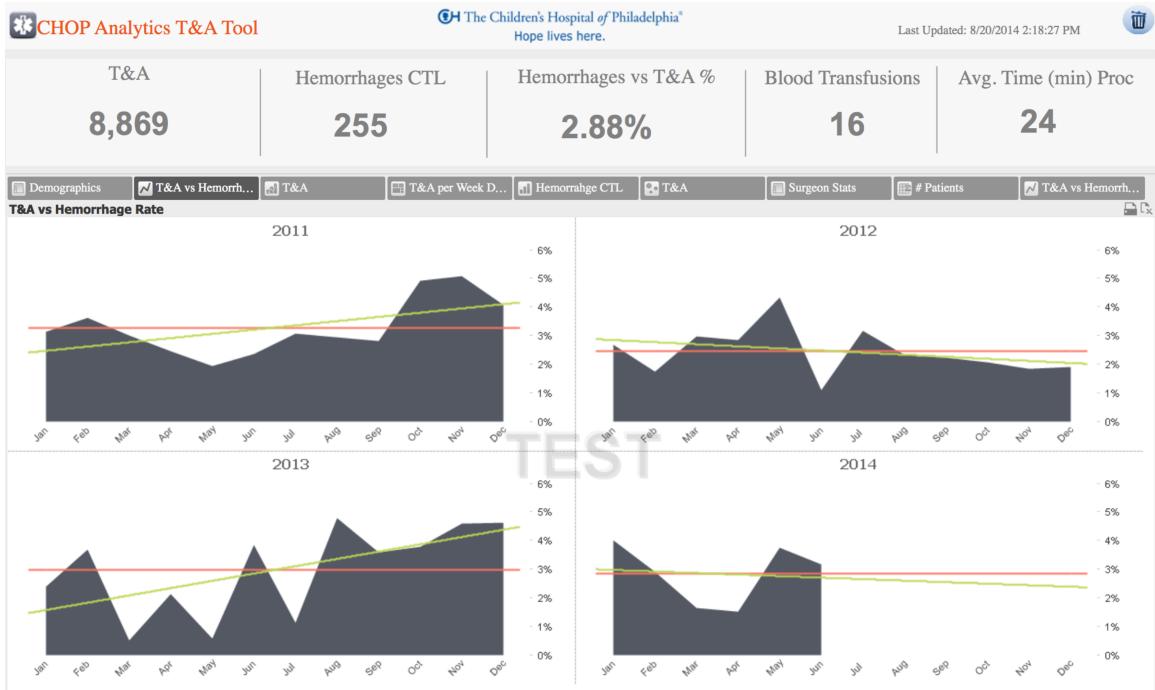


Figure 1:

Post-tonsillectomy hemorrhage dashboard. Each graphical panel displays a single variable on the x-axis and a patient count on the y-axis. The T&A vs. Hemorrhage rate panels represents the percentage of patients requiring surgical re-exploration following adenotonsillectomy per month. The green line represents the trend during the calendar year, while the orange line represents the trend over all four calendar years. While the rate appears to increase during certain months, such as September–December 2011 and August to December 2013, the overall trend is decreasing. The blood transfusions represents all patients who received blood transfusions during the 30 days following the original tonsillectomy. The procedure time is determined by the time difference between in-room and out-of-room time stamps.