Retrospective Quantitative Analysis of QBL Versus Post-partum Day #1 Hematocrit at UPMC Magee Women's Lititz Over 1 Year

Joseph Carter, DO, Sharee Livingston, DO

INTRODUCTION

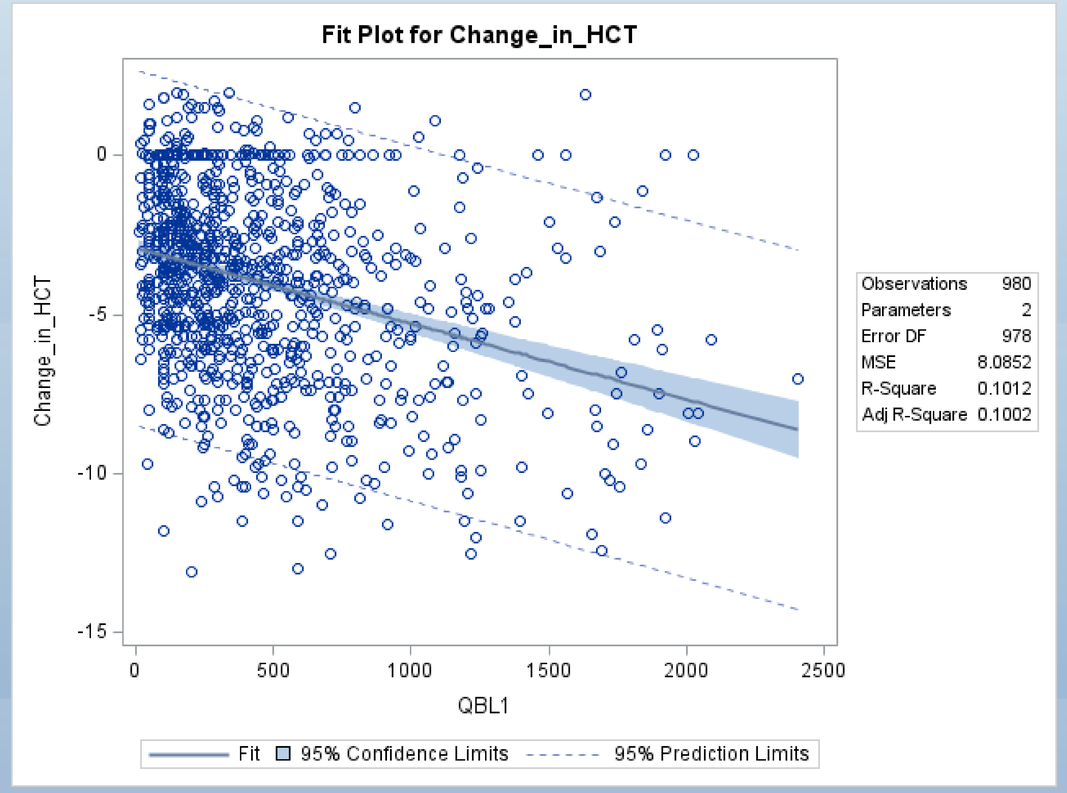
The methods used to measure blood loss have historically been estimated blood loss (EBL) and quantitative blood loss (QBL). However, the current data does not support any one method of quantifying blood loss to be superior to another. The quantification of blood loss provides a more accurate assessment of actual blood loss compared to visual estimation (EBL) (1). In July 2022, UPMC Magee Women's Lititz changed the method of measuring blood loss from estimated blood loss (EBL) to quantitative blood loss (QBL). The goal of this analysis is to determine if QBL is an accurate method to estimate blood loss.

METHOD

This is a retrospective observational study. Delivery data from UPMC Magee Women's Lititz was compiled from July 1, 2022, to July 1, 2023. Deliveries were included if QBL, admission hematocrit, and a post-partum day one hematocrit were available. Deliveries data was excluded if a blood transfusion was administered. We constructed our expected change in hematocrit based on "Correlation of Transfusion Volume to Change in Hematocrit" by Elzik at al in 2006, in which a decrease of 3% hematocrit was seen for every 500mL of measured blood loss. Linear regression was used to compare the change in hematocrit and the measured QBL.

RESULTS & DISCUSSION

A result of 980 out of a total population of 1,178 (83%) deliveries were included in the analysis. Overall, the average measured QBL was 455ml. and average change in hematocrit was -4.0%. The linear regression report on the delivery data predicted a drop in hematocrit of 3.9 for every 500ml of blood loss (y=-2.9-0.002x ($p<0.0001$)).



CONCLUSION

On average, QBL was an under predictive method of measure for blood loss, by 26%. The decision to utilize QBL would require further incorporation of accurate and standardized measurement processes to perform or sufficiently meet the expected industry standards.

REFERENCES

1- Quantitative blood loss in obstetric hemorrhage. (2019). Obstetrics & Gynecology, 134(6). https://doi.org/10.1097/aog.0000000000003564

2- Elzik ME, Dirschl DR, Dahners LE. Correlation of transfusion volume to change in hematocrit. Am J Hematol. 2006 Feb;81(2):145-6. doi: 10.1002/ajh.20517. PMID: 16432852.