Vacuum-induced hemorrhage control versus balloon tamponade for management of postpartum hemorrhage (PPH): single center experience

Angela R. Seasely, MD
Jeff M. Szychowski, PhD
Nancy Saxon, RN
Brian M. Casey, MD
Alan Tita, MD
Akila Subramaniam, MD
University of Alabama at Birmingham
Birmingham, AL

Objective
Uterine balloon tamponade (UBT, eg. Bakri balloon) has been used later in the PPH cascade after failure of first-line measures such as uterotonics and uterine massage. A recent multi-center study demonstrated that a new vacuum-induced hemorrhage control (VHC) device (Jada System®, Alydia Health®) used earlier in the PPH cascade (failed first-line measures with maximum EBL 1500mL) achieved rapid control of PPH (median 3 minutes). We sought to compare VHC to UBT for PPH control at our single center.

Study Design
Retrospective single-center cohort study comparing VHC procedures during the PEARLE study (2019-2020) to all women treated with UBT (2015-2018, historical cohort). VHC was used per trial protocol whereas UBT was used per routine clinical practice. Given this difference, descriptive statistics are presented, statistical tests were implemented with Wilcoxon rank sum test on select variables. Individual chart review was used to ascertain baseline maternal demographics and intrapartum characteristics. Outcomes included measures of PPH management (uterotonics, surgical interventions), bleeding parameters, length of device use, and length of hospital stay.

Results
Eleven women were treated with the VHC device and 11 women received UBT treatment. While all women were treated for atony-related bleeding, the UBT group were more likely to have undergone a CD and have a higher BMI. The VHC group required fewer instances of multiple uterotonics, required no additional surgical intervention or ICU admission, and had less blood transfusions (Table). Shorter indwelling time was observed in the VHC cohort (2.2 hrs vs UBT 25 hrs) and hospital stay length was shorter with VHC (2.1 days vs UBT 5 days). These findings persisted when limited to vaginal deliveries only.

Conclusion
Positive trends in patient outcomes can be observed with early implementation of the VHC device compared to the later clinically indicated use of UBT. Further studies should evaluate the use of devices (VHC or UBT) earlier in the PPH cascade and compare head-to-head the pragmatic use of these two individual devices for PPH treatment.