Balloon tamponade versus a novel vacuum-induced hemorrhage control device for treatment of postpartum uterine bleeding

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Objective

Intrauterine devices are an important tool in postpartum hemorrhage (PPH) management. Uterine balloon tamponade (UBT) has been available for decades. A recent, large open-label prospective cohort study of a novel device using vacuum-induced hemorrhage control (VHC) (Jada System®, Figure 1) has been published (D’Alton 2020). The objective of this analysis was to retrospectively review UBT cases at 2 of the 12 participating sites in the VHC study, to provide context for VHC outcomes.

Study Design

A retrospective multi-center chart review of UBT cases was conducted. UBT chart review included a maximum of 30 cases per site in a sequential review from August 2017 to August 2020. Estimated blood loss (EBL) at initiation had no upper limit for UBT cases. VHC data was collected in an open-label prospective cohort study from February 2018 to January 2020, and participant characteristics were previously published. Treatment success was defined as avoidance of escalation of treatment for ongoing bleeding for both UBT and VHC interventions.

Results

Sixty UBT and 106 VHC cases were included. PPH was successfully treated in 80% of UBT patients and 94% of VHC patients. Prior treatment with uterotonics and uterine massage was administered before all UBT and VHC cases. Median EBL at device insertion and rates of RBC transfusion was greater for patients with UBT. The median device treatment time was longer for UBT versus VHC patients (15.9 hours and 3.2 hours). For UBT, it was not possible to determine timing of PPH control until device removal, as observation post-tamponade is required to verify uterine contraction and control of bleeding.

Conclusion

Both UBT and VHC are effective tools for management of PPH. VHC was associated with shorter duration of treatment with direct monitoring of bleeding. VHC was initiated at a lower EBL than UBT, which may account for apparent differences in transfusion rates. Further study is needed to assess comparative effectiveness of treatments for PPH.