Use of Novel Intrauterine Vacuum Device to Reduce Postpartum Hemorrhage

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BACKGROUND

Postpartum hemorrhage (PPH) is the leading cause of maternal mortality worldwide and accounts for approximately 25% of maternal deaths that occur during pregnancy. Despite efforts in the US to reduce morbidity related to obstetric hemorrhage, case numbers continue to rise, and transfusion rates also continue to increase.

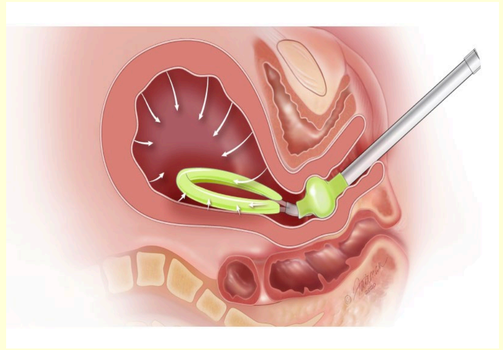
It is standard practice to implement patient safety bundles on Labor & Delivery units to optimize "readiness to react" for every patient every time. Training and data reporting are also critical to the success of a patient safety initiative.

When discussing the etiologies of postpartum hemorrhage, greater than 75% of cases are due to uterine atony. On our labor unit at Touro Hospital, a novel device was introduced in late 2022 that specifically focuses on treatment of uterine atony as a primary source of bleeding.

AIM

The intent of this project was to introduce, the Jada System™, a novel intrauterine vacuum-induced hemorrhage control device, to the Labor & Delivery unit at Touro Hospital.

- A pilot exercise was completed by two faculty physicians.
- The aim was to complete the pilot by December 31, 2022 to utilize these devices for patients experiencing PPH due to uterine atony.
- Secondary goals were to determine the optimal stage of hemorrhage for use and to review blood product utilization for each patient in the pilot.



MEASURES

Outcome measures: quantitative blood loss (QBL) for delivery, number of blood products utilized
Process measures: device properly used based on manufacturer instruction, PPH algorithm followed

A brief pilot conducted with two obstetricians found the following:

- Devices were placed between 850-1300cc Quantitative Blood Loss (QBL)
- 50% of patients required blood transfusion
- Average blood loss following insertion of device was ~120cc
- Cost effectiveness appears to increase after blood loss exceeds 1000cc

CHANGE RECOMMENDATIONS

- Early Jada™ placement for patients with high risk for PPH can be beneficial and prevent morbidity for patients.
- The device should be considered at the time of 3rd uterotonic agent as part of a standard hemorrhage algorithm.
- The device should also be considered at >1000cc QBL with ongoing bleeding.
- All physicians and nurses must receive training prior to utilization of the device to optimize its use.

References:
1. CDC, Maternal Mortality data 2017-2019. https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/data-mmrc.html
2. D'Alton M., et al. Intrauterine Vacuum-Induced Hemorrhage Control Device for Rapid Treatment of PPH. Obstetrics & Gynecology, November 2020.

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