Table D-50. Evidence table for studies addressing management of PPH (Alexander 2009)

| **Study** **Description** | **Intervention** | **Inclusion/Exclusion** **Criteria & Population** | **Outcomes** |
| --- | --- | --- | --- |
| Author:Alexander et al., 2009 51Country: USEnrollment period: March 2002 to June 2006Birth setting: hospitalFacility characteristics: Tertiary careFunding:Authors report no financial conflictsDesign: Population-based observation study | **Intervention:** Blood transfusion (any type) to treat hypovolemia caused by obstetric hemorrhage**Groups:****G1**: whole blood transfusion **G2**: packed RBCs**G3**: combination of blood productsN at enrollment: **G1:** 659 (43%)**G2:** 593 (39%)**G3:** 288 (19%)N at follow-up: NRDuration of treatment: NRTiming of treatment: NR Order of treatment: NRLength of follow-up: NR | **Operational definition of PPH:** NR**Definition of success of treatment**: NR**Method of blood loss measurement:** NRInclusion criteria: * Admitted to hospital for delivery
* Hypovolemia from obstetric hemorrhage as defined by one or more of the following: 1) systolic blood pressure less than 100 mm Hg not due to regional analgesia or anesthesia; 2) pulse 100 beats per minute or more; 3) a positive “tilt” test (20 beats per minute increase in pulse or decrease in systolic blood pressure of 20 mm Hg) or of the static symptoms (to dizziness, fainting, nausea, or vomiting upon sitting up); and 4) urine flow less than 30 mL/h.
* hematocrit less than 20% secondary to hemorrhage or who had a hematocrit between 20% and 30% in the face of ongoing hemorrhage and evidence of hemodynamic instability per the above criteria received blood.

Exclusion criteria: NR**Maternal age, yrs (%):****G1:** 17 or less – 54 (8) 35 or more – 66 (10)**G2:** 17 or less – 39 (7) 35 or more – 54 (9)**G3:** 17 or less – 28 (10) 35 or more – 34 (12)**Parity (Nulliparity), n (%):** **G1:** 333 (51)**G2:** 306 (52)**G3:** 135 (47)**Weeks gestation:** NR**Single pregnancy:** NR**Multiple pregnancy:** NR**Race/ethnicity, n (%):**Hispanic**G1:** 573 (83%)**G2:** 493 (83%)**G3:** 236 (82%)African American**G1:** 61 (9%)**G2:** 75 (13%)**G3:** 30 (10%)White**G1:** 17 (3%)**G2:** 14 (2%)**G3:** 12 (4%)Other**G1:** 8 (1%)**G2:** 11 (2%)**G3:** 10 (3.5%)**BMI, 30 kg/m2 or more, n/N (%):****G1:** 328/582 (56%)**G2:** 328/548 (59%)**G3:** 139/257 (54%)**Baseline hemoglobin:** NR**SES:** NR**Mode of birth:** NR**ASA Class, n (%):**I**G1:** 8(1)**G2:** 0(0)**G3:** 2 (0)II**G1:** 517 (78)**G2:** 470 (79)**G3:** 219 (76)III**G1:** 45 (7)**G2:** 50 (8)**G3:** 41(14)IV**G1:** 2 (0)**G2:** 5 (1)**G3:** 4 (1)Not available**G1:** 87 (13)**G2:** 68 (11)**G3:** 22 (8)**Risk factors, n (%):** Advanced maternal age(see above)**Cesarean delivery n (%):****G1:** 337 (51)**G2:** 305 (51)**G3:** 164 (57)p = 0.22**Labor induction/augmentation, n (%):**Total**G1:** 359 (55)**G2:** 322 (54)**G3:** 55 (19)p = 0.24Induction**G1:** 151 (23)**G2:** 143 (24)**G3:** 82 (28)p = 0.63Augmentation**G1:** 208 (32)**G2:** 179 (30)**G3:** 0Pregnancy-related hypertension**G1:** 176 (27)**G2:** 179 (30)**G3:** 84 (29)p = 0.38Placenta previa or abruption**G1:** 31 (5)**G2:** 47 (8)**G3:** 46 (16)p < 0.001Chorioamnionitis**G1:** 141 (21)**G2:** 127 (21)**G3:** 56 (19)p = 0.76Perineal trauma**G1:** 4 (1)**G2:** 7 (1)**G3:** 23 (8)p < 0.001**Primary etiology of PPH, n (%):** Uterine atony**G1:** 22 (3)**G2:** 11 (2)**G3:** 6 (2)p = 0.22 | **Blood loss:** NR**Transfusion:** NR**Units transfused (mean):****G1:** 2.2**G2:** 2.3**G3:** 5.5**ICU admission, n (%):****G1:** 4 (1)**G2:** 7 (1)**G3:** 23 (8)p < 0.05**Anemia :**HCT at time of transfusion, mean (IQR)**G1:** 24.1 (21.3-27.2)**G2:** 24.2 (21.6-27.5)**G3:** 24.3 (20.9-27.2)p = NR**Length of stay:** NR**Mortality:****G1:** 0**G2:** 1Maternal death in a woman with diabetes and chronic congestive heart failure after cesarean for prolonged labor and nonreassuring fetal heart rate pattern**G3:** 2One maternal death thought to be due to pulmonary embolism and multiorgan failure following primary cesarean for a failed induction of labor for severe preeclampsiaOne maternal death in a woman with severe preeclampsia who experienced placental abruption and liver failure leading to multisystem organ failure and respiratory failure**Uterine preservation:**Hysterectomy, n (%)**G1:** 18(3)**G2:** 16 (3)**G3:** 48 (17)p < 0.001**Future fertility:** NR**Breastfeeding:** NR**Psychological impact:** NR**Other outcomes reported, n, (%):**Acute tubular necrosis**G1:** 2 (0.3)**G2:** 12 (2)**G3:** 11 (4)p <0.001Adult respiratory distress**G1:** 3 (0.5)**G2:** 2 (0.3)**G3:** 6 (2)p < 0.01Pulmonary edema**G1**: 47 (7)**G2:** 24 (4)**G3:** 39 (14)p < 0.001Hypofibrinogenemia**G1:** 1 (0.2)**G2:** 2 (0.3)**G3:** 47 (16)p <0.01**Harms of intervention:** NR**Confounders:** NR/list**Effect modifiers:** NR/list |