

Background

- Patients with type O blood have been reported to have more bleeding complication than those of other pooled blood groups (OR 1.33)
- Prior studies on postpartum hemorrhage by blood type
 - Yielded mixed results
 - Did not separate by mode of delivery

Materials and Methods

- PeriBank of Baylor College of Medicine queried from January 2011 to March 2018
- Primary Outcome: postpartum hemorrhage (PPH) analyzed by route of delivery and by blood type
- Definition of PPH: 500cc at vaginal delivery, 1000 cc at C-section
- Secondary outcomes: delayed postpartum hemorrhage, blood transfusion, ICU admission, length of hospital stay, intrapartum D+C, or hysterectomy

Results

- 22,484 vaginal deliveries included
 - No difference in rate of postpartum hemorrhage or secondary outcomes
- 9,539 cesarean deliveries included
 - Type O blood: higher rates of hemorrhage than other blood groups (p=0.035)

Pregnant patients with Type O blood were more likely to experience a postpartum hemorrhage at the time of cesarean delivery but not vaginal delivery compared to non-O blood type. This risk factor did not change clinical outcomes including transfusions and peripartum hysterectomy between blood types.



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Table 1: Vaginal delivery: Patient characteristics and outcomes

	O	A	B	AB	p
Patient characteristics					
	n=13,255 (59%)	n= 6089 (27.1%)	n=2517 (11.2%)	n=623 (2.8%)	-
Age (y)	28.8 (±0.05)	29.4 (±0.08)	29.5 (±0.1)	28.8 (±0.2)	<.0001
Average parity	1.5 (±0.01)	1.4 (±0.02)	1.3 (±0.03)	1.2 (±0.05)	<.0001
Race	-	-	-	-	<.0001
Thrombocytopenia ¹	1554 (11.72%)	710 (11.66%)	348 (13.83%)	76 (12.20%)	0.023
Induction of labor	2757 (20.80%)	1426 (23.42%)	536 (21.30%)	150 (24.08%)	0.0002
Regional anesthesia	8863 (66.87%)	4293 (70.50%)	1740 (69.13%)	446 (71.59%)	<0.0001
Outcomes					
	n=13,255 (59%)	n= 6089 (27.1%)	n=2517 (11.2%)	n=623 (2.8%)	-
Postpartum hemorrhage	428 (3.2%)	169 (2.8%)	82 (3.3%)	19 (3.1%)	0.38
Delayed postpartum hemorrhage	24 (0.2%)	12 (0.2%)	5 (0.2%)	0 (0%)	0.7
Blood transfusion	95 (0.7%)	30 (0.5%)	17 (0.7%)	7 (1.1%)	0.2
Intrapartum D+C	29 (0.2%)	14 (0.2%)	5 (0.2%)	1 (0.2%)	1
Hysterectomy (intrapartum)	5 (0.04)	1 (0.02)	1 (0.04)	0 (0.0)	0.8
Length of hospital stay (days)	2.6 (±0.01)	2.6 (±0.03)	2.6 (±0.02)	2.6 (±0.05)	0.7
ICU admissions	4 (0.03%)	3 (0.05%)	0 (0%)	1 (0.2%)	0.3

Table 2: Cesarean delivery: Patient characteristics and outcomes

	O	A	B	AB	p
Patient characteristics					
	n=5399 (56.6%)	n=2725 (28.6%)	n=1155 (12.1%)	n=260 (2.7%)	-
Age (years)	30.6 (±0.08)	30.8 (±0.1)	30.9 (±0.2)	31.4 (±0.4)	0.03
Average parity	1.4 (±0.02)	1.2 (±0.02)	1.2 (±0.4)	1.2 (±0.08)	<0.0001
Race	-	-	-	-	<0.0001
Thrombocytopenia ¹	746 (13.82%)	395 (14.50%)	149 (12.90%)	37 (14.23%)	0.61
Induction of labor	804 (14.89%)	459 (16.84%)	196 (16.97%)	43 (16.54%)	0.076
Regional anesthesia	5083 (94.15%)	2565 (94.13%)	1082 (93.68%)	249 (95.77%)	0.64
Outcomes					
	n=5399 (56.6%)	n=2725 (28.6%)	n=1155 (12.1%)	n=260 (2.7%)	-
Postpartum hemorrhage	281 (5.2%)	103 (3.8%)	51 (4.4%)	11 (4.2%)	0.035
Delayed postpartum hemorrhage	12 (0.2%)	10 (0.4%)	2 (0.2%)	1 (0.4%)	0.6
Blood transfusion	134 (2.5%)	69 (2.5%)	27 (2.3%)	7 (2.7%)	1
Intrapartum D+C	6 (0.1%)	2 (0.07%)	0 (0%)	1 (0.4%)	0.3
Hysterectomy (intrapartum)	43 (0.8%)	19 (0.7%)	11 (1%)	3 (1.2%)	0.8
Length of hospital stay (days)	3.6 (±0.5)	3.6 (±0.04)	3.8 (±0.1)	3.9 (±0.2)	0.3
ICU admissions	18 (0.3%)	6 (0.2%)	5 (0.4%)	2 (0.8%)	0.4

Data reported as mean (+ standard error) or number (%), as applicable
Abbreviations: D+C, dilation and curettage; ICU, intensive care unit
¹Thrombocytopenia defined as platelets <150 platelets/microliter