

RELEVANT FACTORS ASSOCIATED WITH POST-PARTUM HEMORRHAGE IN A RURAL MEDICAL CENTER

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Introduction

- Postpartum hemorrhage (PPH) is a severe complication of pregnancy, affecting approximately 14 million women a year, is a major cause of maternal mortality worldwide, and accounts for 20% of cases of maternal deaths
- The aim of this study was to investigate causative factors of the increasing PPH rate at our institution

Methods

- After Investigative Review Board (IRB) approval, a retrospective electronic medical record (EMR) review was performed over 20 months comparing parturients diagnosed with PPH to parturients without a diagnosis of PPH
- Descriptive statistics included frequencies and percentages for categorical data and mean and standard deviation for continuous variables.
- The Chi-square test was used for nominal data and t-test for interval data with a $p < 0.05$ being significant



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Results

- From February 2020 through October 2021, there were 1367 controls versus 255 patients with post-partum hemorrhage (PPH).
- No differences were noted with respect to weekday, admission source, emergency room patients, admission status, length of stay, demographic data (age, race, ethnicity), ICU LOS, diagnostic imaging, and discharge status
- Differences were noted with respect to primary payer (p = 0.0007), relative expected mortality (p < 0.0001), relative expected LOS (p = 0.0002), charges (p = 0.016), direct cost (p = 0.043), blood tests (p = 0.004), laboratory (p = 0.006), pharmacy (p < 0.0001) and procedure physician provider (p < 0.0001)

Table	Factor	Control (n=1367)	PPH (n=255)	P value	OR (95% CI)
Age (yr)		28.3 ± 5.6	28.5 ± 5.7	0.69	-
Race		-	-	0.62	-
	White	1191	219	0.59	0.9 (0.6-1.3)
	Black	38	9	0.51	1.3 (0.6-2.7)
	Asian	15	5	0.26	1.8 (0.6-5.0)
	Other	123	22	0.85	1.0 (0.6-1.5)
Ethnicity		-	-	0.49	-
	Non-hispanic	1291	243	0.58	1.2 (0.6-2.2)
	Hispanic	25	2	0.25	0.4 (0.1-1.8)
	Hispanic unknown	51	10	0.88	1.0 (0.5-2.1)
Admission Source		-	-	0.39	-
	Clinic or physician's office	972	183	0.83	1.0 (0.8-1.4)
	Non-health care facility	289	47	0.33	0.8 (0.6-1.2)
	Transfer	106	25	0.27	1.3 (0.8-2.0)
Admission Status		-	-	0.18	-
	Elective	722	126	0.32	0.9 (0.7-1.1)
	Urgent	585	111	0.83	1.0 (0.8-1.3)
	Emergency	57	18	0.046	1.7 (1.0-3.0)
	Unknown	3	0	0.86	0.8 (0.1-14.8)
Admit day of week		1367	255	0.35	-
Primary Payer		-	-	< 0.001	-
	Commercial	740	154	0.07	1.3 (1.0-1.7)
	Medicare/Medicaid	618	94	0.01	0.7 (0.5-0.9)
	Self-pay/Unknown	9	7	0.004	4.3 (1.6-11.5)
Observed charges (\$)		18466 ± 22877	22116 ± 17524	0.016	-
Length of stay (days)		3.04 ± 4.16	3.08 ± 2.53	0.88	-
Intensive Care Unit (days)		2.8 ± 3.0	1.8 ± 0.4	0.49	-
Blood tests		29	17	0.004	-
Laboratory tests		158	59	0.006	-
Pharmacy medications		720	155	< 0.001	-
Discharge Status		-	-	0.31	-
	Home-self-care	1348	251	0.82	0.9 (0.3-2.6)
	Transferred	7	0	0.48	0.4 (0.1-6.2)
	Left AMA	12	4	0.31	1.8 (0.6-5.6)



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Conclusion

- Parturients with PPH were more likely to have commercial insurance, higher relative expected mortality, longer expected LOS, higher charges and direct costs, more blood tests, more laboratory analysis testing and less pharmacy medications
- The increased cost associated with a woman experiencing PPH is multifactorial
- This increased cost can be a burden on women and should push medical providers to further study and implement preventative strategies including increased awareness for parturients with commercial insurance and revision of institutional PPH treatment protocols
- Implementing such strategies could improve not only patient care but patient outcomes

