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MATERNAL AND PERINATAL OUTCOME OF MOTHERS PRESENTING WITH APH IN SHEIKH ZAYED HOSPITAL, RAHIM YAR KHAN

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Abstract:

***Background**: Antepartum hemorrhage would affect mother and her neonates. **Objective:** To determine maternal and neonatal outcome of mothers presenting with APH in a tertiary care hospital. **Methodology:** This was cross sectional study conducted in Sheikh Zayed Hospital, Rahim Yar Khan from April to May 2018 on 94 mothers presenting in Gynecology and obstetrics ward with ante-partum hemorrhage (APH).**Results:** Regarding maternal outcome, out of 94, 64 (68.1%) mothers were healthy and alive, 8 (8.5%) were admitted in ICU, 18 (19.1%) went into shock and 4 (4.3%) died whereas 30 (31.9%) of neonates were healthy and alive, 19 (20.2%) were admitted in ICU, 3 (3.2%) had ANN and 42 (44.7%) died perinatally. Our study showed maternal education has reduced both perinatal (p value=0.005) and maternal (p-value=0.015) morbidity while husband education has not significantly affected perinatal mortality and morbidity (p-value=0.655). Our research showed that really affect mode of delivery, it has significant affect in perinatal outcome (p=0.002).Conclusion: This study showed that large proportion of mothers with antepartum hemorrhage (APH) faced complications like shock, ICU admission and even death whereas majority of neonates faced ICU admission, ANN and almost half of neonates died during perinatal period. Mode of delivery has no Significant association with maternal outcome was significantly poor among mothers who delivered via SVD*

.***Keywords:** APH, Maternal Outcome of APH, Neonatal outcome of APH, Mortality, Morbidity*

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INTRODUCTION:

Antepartum haemorrhage (APH) is obstetrical emergency contributing to bleeding from or into the genital tract after the period of viability and before the end of second stage of labor.1,2,3 According to World Heath organization antepartum haemorrhage is bleeding after 28 th week of pregnancy.1 APH is most feared and dreadful for both doctor and patient. Causes of APH most commonly include placental bed i.e. placenta previa and placental abruption are common. In few cases cause may be local in the genital tract or systemic diseases 4,7. APH is more common in mothers with placenta previa than that of non-placenta previa mothers. About half of the cases of APH are due to unknown origin. It is by far the most common cause (in 50% cases) and complicate upto 6% of pregnancies. Diagnosis of APH of unknown origin is by exclusion of placental causes after ultrasound examination 4,7. Number of obstetrical and non-obstetrical risk factors of placenta previa are advancing maternal age, multiparity, previous placenta previa, uterine scar due to c-section or uterine surgery, smoking or substance abuse 1,7. Maternal and neonatal morbidity/mortality is one of the major public health concerns in developing countries, where risk of death from maternal causes is 100 times higher than developed countries.8,9,10 Obstetrical hemorrhage includes both APH and PPH and it is major cause of maternal mortality in both developed and developing countries,11,12 and primary cause of perinatal morbidity/mortality. 6,9 Obstetrical hemorrhage is responsible for 50% of maternal deaths globally. 6 A report of UK confidential enquiries report about maternal deaths shows hemorrhage is sixth highest direct cause of maternal deaths 6. APH complicates 2-5% of pregnancies,1, 2,8 mothers presenting with APH may complicate and develop preterm labor, postpartum hemorrhage, malpresentation, sepsis,shock, retained placenta and death 10. Fetal complications of APH mothers are low birth weight, IUD, prematurity, asphyxia neonaturam and congenital malformations.8, 12,13 APH causes thirty percent of maternal mortality 2 which can be reduced significantly as 50% are avoidable risk factors.8 In developed countries maternal mortality rate is reduced to 6/100000 live births due to better obstetrical care 2,3. Developing countries contribute to 99% of world's maternal deaths 9. Perinatal mortality in developed countries is 10/1000 total births while in developing countries like India it is 60/1000 total births 2,3. In developing countries like India frequency of adverse outcomes of obstetrical haemorrhage is more due to inadequate obstetrical services and pre-existing anemia, lack of awareness of patients and their relatives 2,3,5,8. Although APH is unpredictable and cannot be prevented but maternal and perinatal morbidity and mortality can be significantly reduced with aggressive obstetrical care 2,3. It is seen that there is strong relationship between APH and c-section due to later development of intrapartum bleeding. Some women undergo preterm c-section due to life threatening APH and others had elective c-section due to hamerrhogic complications 11. This study was conducted at a tertiary care and aim of this study was to determine the maternal and fetal outcomes of women presenting with APH in gynaecology & obstetrics ward of Sheikh Zayed Hospital, RahimYar Khan.

METHODOLOGY:

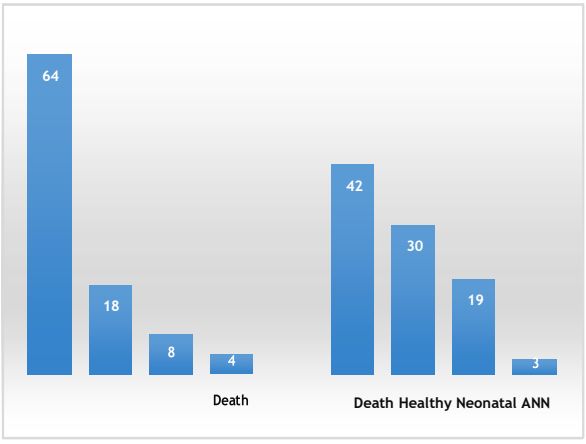
This cross-sectional study was conducted in Sheikh Zayed Medical College/Hospital, Rahim Yar Khan from April to May 2018. Study Participants were all the mothers admitted in obstetrics and Gynaecology ward for delivery. A total of 94 mothers were randomly selected. A pre- designed, pre-tested questionnaire was used to record different variables that included demographics as well as information relevant to the objective of study such as supplement intake, frequency of ultrasound examination, history of ANC, risk identified, history of obstructed labor in previous pregnancies, maternal and neonatal outcome.

All the study participants were informed clearly about the nature and purpose of study and informed verbal consent was taken for inclusion in study. Study participants were assured of anonymity. Data was entered in Statistical Package for Social Sciences (SPSS version 20). Measures of central tendency of numerical data like age, monthly income and frequency of ultrasound examination was carried out and presented as mean and standard deviation. Qualitative variables like maternal and neonatal outcome was presented as percentage. Chi square test was applied to compare categorical variables. P value of less than 5% was taken as significant.

RESULTS:

Ethical permission was sought from Institutional Review Board. This study showed the frequency of maternal and neonatal outcome among mothers having APH. Mean age of mothers was 30 ±4 years and mean number of ultrasound done were 3 ±1.6. The results shows 46 (48.9%) mothers were illiterate, 8 (8.5%) were primary pass, 22 (23.4%) were matric pass and that 18 (19.1%) were FSc and above whereas 26 (27.7%) men were illiterate, 12 (12.8%) were primary pass, 26 (27.7%) were matric pass and 30 (31.9%) were FSc and above.

Figure I: Maternal and perinatal outcome among APH mothers



In this study 48 (51.1%) delivered via SVD and 46 (48.9%) via c-section and 90 (95.7%) mothers had antenatal visits and 4 (4.3%) had no antenatal visit. In this study 90 (95.7%) had ultrasound examination during pregnancy and 4 (4.3%) had no ultrasound examination done. During ANC risks were identified in 44 (46.8%) pregnancies and no risk was identified in 50 (53.2%) pregnancies. Out of risks identified 15(14.1%) had PIH,35 (32.9%) has anemia, 17(15.98%) had placenta previa, 2 (1.88%) had PVleaking, 2 (1.88%) had oligohydromnios, 2 (1.88%) had malposition of baby, 2 (1.88%) had twin pregnancy, 4 (3.76%) had GDM and no risk was identified in 50 (47%). In this study 66 (70.2%) had taken supplements during pregnancy and 28 (29.8%) had not taken any supplements. In this study 10 (10.6%) had history of obstructed labor in previous pregnancy and 84 (89.4%) had no history of obstructed labor and 22 (23.4%) had history of c-section.Table I Shows 32 (66.7%) mothers who delivered via SVD were healthy and alive, 4 (8.3%) admitted in ICU, 10 (20.8%) went into shock, 2(4.2%) died and 32 (69.7%) who delivered via c-section were healthy and alive, 44 (8.7%) were admitted in ICU, 8 (17.4%) went into shock and 4 (4.3%) died. (p=0.98) Whereas

Table I: Mode of delivery and maternal education versus maternal and neonatal outcome

Mode of delivery	**Maternal outcome**				**Total**	**P value**
	Healthy and alive	**ICU admission**	**shock**	**Death**		
SVD	32 (66.7%)	4 (8.3%)	10 (20.8%)	2 (4.2%)	48 (100%)	**0.98**
c-section	32 (69.6%)	4 (8.7%)	8 (17.4%)	2 (4.3%)	46 (100%)	
Total	64 (68.1%)	8 (8.5%)	18 (19.1%)	4 (4.3%)	94 (100%)	
Mode of delivery	**Neonatal outcome**				**Total**	
	Healthy and alive	**ICU admission**	**ANN**	**Death**		
SVD	10 (20.8%)	8 (16.7%)	0 (0%)	30 (62.5%)	48(100%)	**0.002**
c-section	20 (43.5%)	11 (23.9%)	3 (6.5%)	12 (26.1%)	46 (100%)	
Total	30 (31.9%)	19 (20.2%)	3 (3.2%)	42 (44.7%)	94 (100%)	
Maternal education	**Maternal outcome**				**Total**	**P-value**
	Healthy and alive	**ICU admission**	**Shock**	**Death**		
Illiterate	26 (56.5%)	8 (17.4%)	10 (21.7%)	2 (4.3%)	46 (100%)	**0.015**

Literate	38 (79.2%)	0 (0%)	8 (16.7%)	2 (4.2%)	48 (100%)	
Total	64 (68.1%)	8 (8.5%)	18 (19.1%)	4 (4.3%)	94 (100%)	
Maternal education	**Neonatal outcome**				**Total**	**P-value**
	Healthy and alive	**ICU admission**	**ANN**	**Death**		
Illiterate	12 (26.1%)	15 (32.6%)	3 (6.5%)	16 (34.8%)	46 (100%)	**0.005**
Literate	18 (37.5%)	4 (8.3%)	0 (0%)	26 (54.2%)	48 (100%)	
Total	30 (31.9%)	19 (20.2%)	3 (3.2%)	42 (44.7%)	94 (100%)	

10 (20.8%) neonates delivered via SVD were healthy and alive, 8 (16.7%) admitted in NICU, 0 (0%) developed ANN and 30 (62.5%) died. 20 (43.5%) delivered via c-section were healthy and alive, 11 (23.9%) were admitted in ICU, 3(6.5%) developed ANN and 12 (26.1%) died perinataly. (p=0.002)In this study 26 (56.5%) of illiterate mothers were healthy and alive, 8 (17.4%) were admitted in ICU, 10 (12.7%) went into shock and 2 (4.35) died and 38 (79.2%) of literate mothers were healthyand alive, 0 (0%) were admitted in ICU, 8 (16.7%) went into shock and 2 (4.2%) died.(p=0.015)In this study 12 (26.1%) neonates of illiterate mothers were healthy and alive, 15 (32.6%) were admitted in NICU, 3 (6.5%) developed ANN, 16(34.8%) died whereas 18 (37.5%) neonates of literate mothers were healthy and alive, 4 (8.3%) admitted in NICU, 0 (0%) developedANN and 26 (54.2%) died perinatal. (p=0.005)

Table II: Husband education versus maternal and neonatal outcome

Husband education	**Maternal outcome**					
	Healthy and alive	**ICU admission**	**Shock**	**Death**	**Total**	**P-value**
Illiterate	14 (53.8%)	4 (15.4%)	6 (23.1%)	2 (7.7%)	26 (100%)	**0.226**
Literate	50 (73.5%)	4 (5.9%)	12 (17.6%)	2 (2.9%)	68 (100%)	
Total	64 (68.1%)	8 (8.5%)	18 (19.1%)	4 (4.3%)	94 (100%)	
Husband education	**Neonatal outcome**				**Total**	**P-value**
	Healthy and alive	**ICU admission**	**ANN**	**Death**		
Illiterate	6 (23.1%)	5 (19.2%)	1 (3.8%)	14 (53.8%)	26 (100%)	**0.655**
Literate	24 (35.3%)	14 (20.6%)	2 (2.9%)	28 (41.2%)	68 (100%)	
Total	30 (31.9%)	19 (20.2%)	3 (3.2%)	42 (44.7%)	94 (100%)	

Table II shows that 14 (53.8%) wives of illiterate men were healthy and alive, 4 (15.4%) mothers were admitted in ICU, 6 (23.1%) went into shock, 2 (7.7%) died and 50 (73.5%) wives of literate men were healthy and alive, 4 (5.9%) were admitted in ICU, 12 (17.6%) went into shock, 2 (2.9%) wives of literate men died. (p=0.226)In this study 6 (23.1%) neonates of illiterate father and were healthy and alive, 5 (19.2%) were admitted in NICU, 1 (3.8%) developed ANN, 14(53.8%) died and 24 (35.3%) neonates of literate father were healthy and alive, 14 (20.6%) admitted in NICU, 2 (2.9%) developed ANN, 28 (41.2%) died perinataly. (p=0.655).

DISCUSSION:

This study was conducted to assess maternal and neonatal outcome among antepartum hemorrhage cases. In this mean age of women was 30± 4 years and mean number of times ultrasound done was 3±1.6. This study showed that 64 (68.1%) mothers were healthy and alive, 8 (8.5%) were admitted in ICU, 18 (19.1%) went into shock and 4 (4.3%) died. Other studies also showed similar maternal mortality rate[1,9], however, in an Indian study[8], maternal mortality was none, in another study in Maharashtra, India[2] it was 0.7%, while a Nigerian study[10] , reported 2% mortality. The findings of some studies were similar to current study like a research at a tertiary care referral hospital reported 2.1% mortality. An african study showed 3.1% mothers died of APH which is comparable to our study result i.e. 4 (4.3%). In a study conducted in Lucknow, UP, India [1] overall mortality was reported 6%.An Indian study,[8] reported ICU admission in6.4% which is comparable to our study in which it was 8 (8.5%) . Out of risks identified during pregnancy placenta previa was in 17 (15.9%) in our study while in a study in lucknow, India[1] itcontributed to 80% cases. In previous studies placenta previa was in 26.7% and 30% respectively similar to a study conducted in Greece[7] i.e. 29.2%. Our study reported PIH in 15 (14.1%) which is in contrast to an Indian study [8] that showed PIH in 73%. Anemia was identified in 64% cases in an Indian study(3) in contrast to our study where 35 (32.9%) were anemic. In a study in Greece[7] no etiology was identified in 26.3% while in contast in our study no risk was identified in 50 (47%) cases.

This study showed that 30 (31.9%) of neonates were healthy and alive, 19 (20.2%) were admitted in ICU, 3 (3.2%) had ANN and 42 (44.7%) died perinataly which is close to studies conducted in Lucknow, India (1) and Nigeria (10) that reported perinatal mortality 42% and 42.8% respectively. Other studies in India,[8] at a tertiary care referral hospital,in Telangana, India[3] and Ethiopia[9] reported perinatal mortality 21%, 23.70%,36.8% and 36.9% respectively which is in contrast to our study. In our study 19 (20.2%) were admitted in NICU which is in contrast to an Indian studies (3,8) where NICU admission was 44% and 8.5%.Another study (5) at tertiary care referral hospital showed 12.5%neonates had birth asphyxia which is significantly high in contrast to our study where 3% had ANN. Our study showed 48 (51.1%) delivered via SVD and 46 (48.9%) via c-section which is comparable to studies conducted at a tertiary care referral hospital[5] and Nigerian Hospital[10] where rate of c- section was 43.80% and 53.5% respectively. In a study conducted at Telangana, India[3] commonest mode of delivery was c-section i.e. 60% and another Indian study[8] reported rate of c-section was 90%. In our study 80.8% mothers had lower education level (48.9% illiterate, 8.5% primary, 23.5% matric) and 19.1% had qualification Fsc and above which is comparable to a study conducted in Qatar showing high incidence of APH in mothers with low education level. Our research showed that maternal outcome was not really affected with mode of delivery (p=0.98) but it has significant improvement in neonatal outcome (p=0.002)]. As far as neonatal outcome is concerned other studies also showed similar results like a research conducted in china[14] showed compared to SVD, antepartum non- indicated c-section was associated with lower likelihood of neonatal death (OR = 0.14, CI = 0.06±0.34),however, neonatal ICU admission (aOR = 0.50, CI = 0.36±0.69) and respiratory distress syndrome (RDS) (aOR = 0.31, CI = 0.16±0.58) was in contrast to our study where rate of NICU admission (23.9%) and ANN (6.5%) i.e. high in c-section deliveries. Similar to our research results another research conducted in New York[15] reported c-section was associated syndrome in newborns. In contrast to our study a research conducted in Mulago hospital, Uganda[16] reported that in patients presenting with PROM there was no statistical difference in perinatal mortality by the mode of delivery i.e. c-section or vaginal delivery.

Our research showed maternal education has reduced perinatal (p value=0.005) and maternal (p-value=0.015) morbidity. Other studies also showed similar results like a research that analyzed determinants of neonatal mortality showed mothers with less than secondary school education, as compared to secondary school or above maternal education level, was only variable that was significant in neonatal mortality (p- value=0.009). Similar to our results another multi country research[18] showed maternal severityoutcome was more in lower education level group, however, in our study maternal mortality was same in illiterate and literate mothers. Analysis of WHO Global survey on maternal and parinatal heath,[19] showed women with education one and six years had twice the risk of maternal mortality than women with more than 12 years of education that is similar to our study results where all maternal deaths were in women with education matric or below. Results of an Italian population based study[21] were also similar to our study that showed low level of education in mothers is associated with high incidence of respiratory distress syndrome in neonates. Our research showed husband education has significantly

reduced perinatal mortality and morbidity (p-value=0.655). Similarly a research conducted in rural Balochistan , Pakistan[20] showed husband involvement reduce perinatal mortality.

CONCLUSION:

This study showed that large proportion of mothers with antepartum hemorrhage faced complicationslike shock, ICU admission andeven death whereas majority of neonates faced ICU admission, ANN and almost half of neonates died during perinatal period. Mode of delivery has no significant association with maternal outcome was significantly poor among mothers who delivered via SVD.

Authors Contribution: FS & SS: Article writeup, Data collection. **ZZ** & GM. Data Analysis and interpretation. **SK:** Proofreading and methods. All authors critically revised and approved its final version.

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