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RESEARCH ARTICLE

AN OBSERVATIONAL STUDY OF POSTPARTUM HEMORRHAGE AT TERTIARY HEALTH CARE CENTER OF CENTRAL INDIA

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Abstract

Introduction: Primary postpartum hemorrhage (PPH) is that the leading explanation for maternal mortality worldwide. India has made significant progress in maternal health care services. Despite this, primary postpartum hemorrhage have a number one reason for maternal mortality in India. Postpartum hemorrhage could be a significant contributor to maternal morbidity & mortality. Obstetric hemorrhage accounts for 38% of maternal deaths, of which PPH accounts for 25%.

Objective: This study was undertaken to review maternal morbidity and mortality in cases of PPH.

Materials and Methods: This was an observational retrospective study conducted within the department of Obstetrics & Gynaecology, G.M.C. Ratlam, Madhya Pradesh, India from June 2018 to March 2020 on a sample size of 130 patients.

Results: The records were analyzed with relevance maternal age, parity, socio-demographic & etiological profile, and maternal consequences in cases of PPH at our tertiary care center. within the present study, the incidence of PPH came dead set be 19% because of the inclusion of all booked and referred cases. the most explanation for PPH during this study was uterine atony i.e. 69.3%. The second common cause was traumatic i.e. 20%. The incidence of peripartum hysterectomy in deep trouble atonic cases was 15.5% and 3.8% in cases of a ruptured uterus. In 83% cases blood and blood products transfusion given. 6.06% cases had maternal death due to haemorrhage.

Conclusion: Proper and early management, together with timely referral of PPH cases will cause a major reduction in maternal morbidity & mortality. Maternal deaths thanks to PPH are clearly declining that's because of improved socioeconomic status, high standard medical and surgical management, expert care delivered at our institute.

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Introduction:-

Obstetrics could be a bloody business that also holds true[1]. Severe obstetric hemorrhage is that the most feared obstetric emergency that may occur to any woman at childbirth. If unattended, the hemorrhage can cause mortality even a healthy female [2]. Among all the four stages of labor, the third stage is that the most important because the most dangerous complication i.e. postpartum hemorrhage (PPH) may occur in an otherwise uneventful delivery

changing it into a formidable disaster. on a daily basis about 1600 women die in childbirth and of those approximately 500 bleed to death [3]. Most of those are thanks to atonic PPH and quite 99% are within the developing world [4]. Hemorrhage is that the fifth or sixth leading reason behind maternal death in developed countries. It accounts for the bulk of cases that end in severe maternal or “near miss” obstetric morbidity[5-7]. Hemorrhage is that the leading reason behind death in developing countries like India. the foremost common variety of obstetric hemorrhage is postpartum hemorrhage, mainly primary. PPH which occurs within 24hrs, primary PPH is that the focus of this text. Secondary PPH is a smaller amount common. Obstetric hemorrhage accounts for 38% of maternal deaths among all deaths, PPH accounts for 25% among 38% of deaths. PPH isn't only a commonest and major killer but also the fastest killer of the mother. The mother dies within 1st 24hrs of delivery. PPH is multifactorial still in 2/3rd patients there aren't any identifiable risk factors so PPH is unpredictable and unpreventable but death thanks to PPH is preventable if the delay is avoided. Among all risk factors, mismanagement of labor at any stage is that the main factor. So correct management the least bit stages of labor is that the surest prophylaxis. Intelligent anticipation, skilled supervision, prompt detection, and effective institution of therapy can prevent and control PPH and stop further disastrous consequences and maternal death. PPH is defined as bleeding from the genital tract in more than 500 ml within the primary 24 hours after birth. Blood volume studies have shown that the traditional woman loses about 500ml at the time of spontaneous vaginal delivery, more with the assisted vaginal delivery, and up to 1000 ml at the time of the cesarian. Secondary PPH is defined as abnormal bleeding from the genital tract between 24 hours and 6 weeks postpartum. The common causes include uterine atony, lower genital tract lacerations, retained placenta & placental fragments, coagulation disorder, and uterine inversion. PPH could be a significant contributor to maternal morbidity & mortality & one in all the millennium development goals set by the United Nation in 2000 is to decrease maternal mortality by three quarters by 2015 & if this can be to be achieved, maternal deaths thanks to postpartum hemorrhage must be reduced. The aim of our study was to review the maternal records with relation to age, parity, socio-demographic & etiological profile, and maternal consequences in cases of PPH at our tertiary care center.

Materials and Methods:-

After obtaining Institutional Ethical Committee approval this retrospective study was conducted within the department of Obstetrics & Gynaecology, G.M.C. Ratlam, Madhya Pradesh, India from June 2018 to March 2020 on a sample size of 130 patients. All the patients included in our study were admitted primarily in our department and people referred from primary and community health centers of adjoining areas of Ratlam, district. Bleed with a primary diagnosis of postpartum hemorrhage. Records were analyzed with regard to maternal age, parity, socio-demographical & etiological profile, and various complications occurring sequel to postpartum hemorrhage and maternal death. Estimation and diagnosis of PPH were supported visual estimation of blood loss >500 ml and that we couldn't depend upon general condition, tachycardia, and fall in pressure or signs and symptoms of a hemorrhagic shock for diagnosis of PPH.

Results:-

In our study total 130 patients had PPH all including booked and referred cases, so incidence was 19%.

Table 1:- Distribution according to parity and age.

		NUMBER	PERCENTAGE
Parity	Primipara	42	32
	Multipara	70	53
Age (yrs)	<20	30	23
	21-25	56	43
	26-30	40	24.7
	>30	4	3

Highest number of cases i.e. 56 out of 130 were in 21-25 years age group. Prevalence of PPH in relation to parity was primipara 32% and multipara 53% .

Table 2:- Presence of high risk factors.

High risk factors	Number	Percentage
Anemia	91	70
No any factor	23	10.6

Preeclampsia/ eclampsia	8	6.1
Twins/ polyhydramnios	2	1.5
Prolonged labour/ obstructed labour	6	4.7

Anemia was high risk factor 70%, In 23 patients i.e. 10.6% of PPH cases there was no identifiable risk factor.

Table 3:- Distribution according to etiology of PPH.

Etiology	Number	Percentage %
(a) Atonic	90	69.3
(b) Traumatic	26	20
Cervicovaginal tear	20	76.9
Vulval hematoma	01	3.8
Pelvic hematoma	00	00
Rupture of uterus	05	19.2
(c) Coagulation defect	11	8.4
(d) Mixed	03	2.3

Main cause of PPH in this study was uterine atony i.e. 69.3% and 2nd common cause was traumatic 20% cases.

Table 4:- Management done in cases of PPH.

PPH	Number	Percentage %
(A) Atonic PPH	90	
Medical management	90	100
Bimanual uterus compression	90	100
Balloon tamponade	10	11.1
Compression suture	10	11.1
Vessel ligation- b/l uterine, ovarian and internal iliac	20	22.2
NASG application	10	11.1
Obstetric hysterectomy	10	11.1
(B) Traumatic PPH	26	
Repair	19	73.0
Drainage of hematoma	01	3.8
Repair of rupture uterus	04	15.3
Hysterectomy	02	7.7
(C) Coagulation defects	11	
Transfusion of PCV/FFP/platelet	11	100
Obstetric hysterectomy	6	54

It shows management done in cases of PPH to save patients' life. Incidence of peripartum hysterectomy done for atonic cases was 11.1% and 7.7% for rupture uterus.

Table 5:- Maternal morbidities and mortality associated with PPH.

Morbidity	No of patients	Percentage
Severe anemia	60	46.1
Hypovolemic shock	26	20
DIC	3	2.3
Need of blood transfusion	108	83

Need of ICU ventilation	16	12.3
Maternal death		
Atonic PPH	04	3
Traumatic PPH	01	0.76
Coagulation defects	03	2.3

It shows maternal morbidity and mortality associated with PPH. Development of acute severe anemia due to PPH in our study was found to be 46.1%. Hypovolumic shock and DIC was found in 20% and 2.3% of cases with PPH. Intensive care was required in 12.3% of cases. IN 83% cases blood and blood products transfusion given. 6.06% cases had maternal death due to haemorrhage.

Discussion:-

Since in our study the inclusion criteria of PPH were all our and referred cases, therefore the incidence came out to be 19%, which is quite high as compared to the reported incidence which varies widely from 2-10% [8]. A systematic re-view reported the highest rates of PPH in Africa (27.5%), and the lowest in Oceania (7.2%), with an overall rate globally of 10.8%[9]. The rate in both Europe and North America was around 13%[9]. Highest number of cases i.e.56 out of 130 were in 21–25 years age group (Table 1), while other studies mention most cases being over 35 years[10]. The reason for this difference perhaps lies in the younger age of marriage in our country in general associated with the relative increased gravidity and parity at younger ages. Multiparity, particularly grand multi-parity has been specified as a factor predisposing to increase frequency of PPH[11,12]. In our study we found bimodal distribution of incidence of PPH in relation to parity i.e. primipara 32% and grand multipara 53%. Reason being different predisposing actors in primigravida like teenage pregnancy, preeclampsia, eclampsia, abruptio, anemia, dysfunctional labour, uterine overactivity while high parity is the reason in multipara. In our study, 40% of the patients were unbooked belonging to the rural areas with lower socio-economic status reflecting the lack of proper antenatal care, illiteracy and ignorance among such population, as is also mentioned in other studies[13,14]. Anemia was high risk factor 70%, In 23 patients i.e. 10.6% of PPH cases there was no identifiable risk factor. We found major PPH in maximum patients with one or more risk factors like preeclampsia, eclampsia, antepartum hemorrhage and twins. The main cause of PPH in this study was uterine atony with a frequency of 69.3%. (Table 3). In a study conducted by Ashraf et al, uterine atony was found in 34% of cases[11]. In international studies uterine atony was the most common cause of PPH, ranging from 50% to 76% of cases[15,16]. The second most common cause of primary PPH is traumatic (20%). International studies also mention a frequency ranging from 9% to 20% of cases of traumatic lesions as the cause of PPH[17,15]. The least common cause of PPH was coagulopathy (8.9%) which was in concordance with the study reported by Anderson et al[18]. Secondary PPH is much less common than primary PPH, occurring in about 1% of deliveries[4]. In our study the incidence of secondary PPH was 2.3% which is comparable to Kanpur study of Singh, Pandey of 2.4%[19]. The incidence of peripartum hysterectomy done for atonic cases was 15.5% in our study (Table 4). In our study in cases of rupture uterus, 3.8% of the patients underwent hysterectomy, as compared to the reports by McMohan and Miller, in which 10-20% of such women required hysterectomy for hemostasis[20,21]. The development of acute severe anemia due to PPH in our study was found to be 46.1% which also indirectly contributed to maternal mortality, as compared to 41.14% in a study by Singh and Pandey in Kanpur [19] and 90.1% in a study conducted by Ayub et al[22]. It must be noted that the study conducted by Ayub et al takes into account all the cases with anemia whereas we took cases with only severe anemia, and thus the difference in our observations. Disseminated intravascular coagulation (DIC) was found in 6% cases of PPH in the study by Ayub et al[22]. Hypovolemic shock and DIC was present in 20% and 2.3% of our patients with PPH. The admission of obstetric patients to critical care facilities is low (published intensive care units admission rates are 0.29% to 1.5% of deliveries in industrialized countries)[23,24]. Intensive care was required in 12.3% of our patients comparable to Kanpur study of Singh, Pandey of 9.72%[19]. The incidence was very much higher in our study because the majority of patients who were referred to our institution, had one or more complications, which required life saving support. Blood transfusion is recognized as one of the eight essential components of comprehensive emergency obstetric care (cEmOC), which has shown to reduce rates of maternal mortality[25,26]. It was found that 83% of cases required blood transfusions. In sub-Saharan Africa, it is estimated that 26% of maternal hemorrhagic deaths are a direct consequence of the lack of blood transfusion services, and globally up to 150,000 pregnancy-related deaths could be avoided each year if women had access to safe blood[27,28]. Maternal mortality due to haemorrhage was observed in 24-68% of women by different authors[29-33]. In our study maternal mortality due to hemorrhage was 6.06%. This huge difference in the percentage mortality reflects the high standard of medical and surgical facilities available and the expert care

delivered at our institute. In our institute there is changing trend of cause of maternal mortality from PPH to preeclampsia and eclampsia and their complications.

Conclusion:-

Hemorrhage continues to be the leading reason for maternal mortality worldwide, accounting for 34% of maternal deaths in Africa, 31% in Asia, 21% in Latin America, and 13% in developed countries[34]. If effective measures are taken to make sure the supply of antenatal care to all or any pregnant ladies, safe hospital deliveries, and timely referral of high-risk pregnancies, complications are expected to cut back. Preventable maternal deaths indicate a gross violation of the essential right of survival and highlight the gross failure of health services on the majority fronts particularly in terms of choice of strategic interventions and their extent of coverage within the population. Proper anticipation and skilled management, together with timely referral of PPH cases will result in a major reduction in maternal morbidity & mortality, as PPH could be a significant contributor to maternal mortality. So much so, that the 5th-millennium development goal aims at reducing the maternal mortality by primarily reducing the amount of cases of PPH. Every pregnancy should culminate in healthy mother and healthy baby and for that, we'd like to confirm that every one women have access to top quality essential and emergency obstetric service initially referral unit (FRU) level to cut back maternal mortality. The frequency and impact of severe hemorrhage is effectively reduced by reducing avoidable risk factors, especially those associated with obstetric interventions as increased CS rate and induction and augmentation of labour with injudicious use of uterotonics. Other risk factors not amenable to vary like age, ethnic origin, and preexisting medical diseases or bleeding disorders will be minimized by extra vigilance and planned conjoined management. The foremost common reason behind PPH is atonic PPH. PPH is multifactorial still in 71% patients have anemia as a risk factor. Maternal deaths thanks to PPH are clearly declining that's because of improved socioeconomic status, high standard medical and surgical management, use of NASG, and expert care delivered at our institute. Finally, surest prophylaxis of PPH is that the correct management of all stages of labour.

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Conflict of Interest:

None declared.

References:-

1. Williams obstetrics 23rd edition, chapter 35, page 757.
2. Chong YS, Su LL, Arulkumaran S. Current strategies for
3. the prevention of postpartum haemorrhage in the third stage of labour. *Curr Opin Obstet Gynecol.* 2004;16:143-150.
4. Confidential Enquiry into Maternal and Child Health. Why mothers die? 2000-2002. London: RCOG Press, 2004.
5. Munro Kerr's Operative Obstetrics 11th edition, chapter 18: pages 225-235. Elsevier publications.
6. Drife JO. Maternal 'near miss' reports? *BMJ.* 1993;307:1087-1088.
7. Baskett T, Sternadel J. Maternal intensive care and near -miss mortality in obstetrics. *Br J Obstet Gynaecol.* 1998;105:981-984.
8. Baskett TF, O' Connell CM. Severe obstetrics maternal morbidity: 15 year population-based study. *J Obstet Gynaecol.* 2005;25:7-9.
9. Didly GA, Paine AR, George NC, Velasco C. Estimated blood loss; can teaching significantly improve visual estimation? *Obstet Gynaecol.* 2004;104:601-606.
10. Calvert, C; Thomas, SL; Ronsmans, C; Wagner, KS; Adler, AJ; Filippi, V (2012). Identifying regional variation in the prevalence of postpartum haemorrhage: a systematic review and meta-analysis. *PloS one.* 7 (7): e41114. PMID 22844432.

11. Bouwmeester FW, Bolte AC, Van Geijn HP. Pharmacological and surgical management for primary postpartum hemorrhage. *Curr Pharma Des* 2005;11:759–73.
12. Ashraf T. Postpartum Hemorrhage: an experience at Sandeman Civil Hospital, Quetta. *J Coll Physicians Surg Pak*. 1997;8:68–71.
13. Munim S, Rahbar M, Rizvi M, Mushtaq N. The effect of grand multiparity on pregnancy related complications: the Agha Khan University experience. *J Pak Med Assoc*. 2000;50:54–8.
14. Subtil D, Somme A, Ardiet E, Deret-Mosser S. Postpartum hemorrhage: frequency, consequences in terms of health status, and risk factors before delivery. *J GynecolObstet Biol Reprod*. 2004;33(Suppl 4):9–16.
15. Wasim T, Majrooh A, Siddiq S. Maternal Mortality- One year review at Lahore General Hospital. *Pak Postgrad Med J*. 2001;12:113–8.
16. Sabrina D, Craigo MD, Peter S, Kapernick MD. Postpartum hemorrhage and abnormal puerperium. *Current Obstetrics and Gynecology logic diagram*. 6th ed. London: Appleton and Lange; 1987. p 574–82.
17. Japaraj RP, Raman S. Segstaken- Blakemore tube to control massive postpartum hemorrhage. *Med J Malaysia*. 2003;58:604–7.
18. Rizvi F, Mackey R, Barrett T, McKenna P, Geary M. Successful reduction of massive postpartum hemorrhage by use of guidelines and staff education. *BJOG*. 2004;111:495–8.
19. Anderson JM, Etches D (March 2007). “Prevention and management of postpartum hemorrhage”. *American Family Physician*. 75 (6): 875–82.
20. Neetu Singh, Kiran Pandey- A study of referral cases of postpartum hemorrhage. *Indian journal of research- Paripex*; volume 3; issue 6; page 149.
21. McMohan MJ, Luther ER, Bowes WA Jr, et al: Comparison of a trial of labour with an elective second caesarian section. *N Engl J Med*. 335:689, 1996.
22. Miller DA, Goodwin TM, Gherman RB, et al: Intrapartum rupture of the unscarred uterus. *Obstet Gynecol*. 89:671, 1997.