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ORIGINAL ARTICLE

Frequency and Clinical Outcomes of Women with Postpartum Hemorrhage at a Tertiary Care Hospital

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ABSTRACT

Background and aim: Postpartum hemorrhage (PPH) is still a leading cause of maternal morbidity and mortality globally. Postpartum hemorrhage is characterized as excessive bleeding (> 500 ml) from the vaginal tract following childbirth. The present study aimed to determine the frequency and clinical outcomes of women with postpartum hemorrhage.

Materials and Methods: This cross-sectional study was conducted on 1346 patients who underwent vaginal delivery in the department of obstetrics and gynecology, Kausar Hospital, Khairpur Mirs from March 2021 to March 2022. The study included all the women who had postpartum hemorrhage following vaginal birth in the labor room or who were referred with primary postpartum hemorrhage. Patients with prior history of bleeding disorders and on warfarin were excluded from the study. SPSS version 26 was used for data analysis.

Results: Of the total 1346 patients, the prevalence of postpartum hemorrhage was 12.6% (n=170). Out of 170 PPH cases, the incidence of primary and secondary PPH was 138 (81.2%) and 32 (18.8%) respectively. The age-wise distribution of patients were as follows: 26 (15.3%) had <20 years, 62 (36.4%) in 21-30 years, 68 (40.1%) in 31-40 years, and 14 (8.2%) in >40 years. The incidence of primiparas, multipara, and grand multipara were 34 (20%), 58 (34.1%), and 78 (45.9%) respectively. The booked and unbooked patients were 56 (32.9%) and 114 (67.1%) respectively. Among 170 PPH patients, the incidence of spontaneous vaginal delivery, instrumental delivery, and cesarean section were 52 (30.6%), 56 (32.9%), and 62 (36.5%) respectively. The major causes of PPH was uterine atony, perineal and vaginal tears, and prolong labor found in 112 (65.9%), 56 (32.9%), and 38 (22.4%) respectively.

Conclusion: The present study concluded that the prevalence of PPH was 12.6% among total cases. Primary PPH was more prevalent than secondary PPH and uterine atony was the most common cause followed by perineal and vaginal tears and prolong labor. Additionally, unbooked patients were more susceptible to PPH. Risk factors assessment, unnecessary induction, and third stage labor active management can prevent the PPH.

Keywords: Postpartum hemorrhage, Clinical outcomes, Uterine atony

INTRODUCTION

Postpartum hemorrhage is an excessive bleeding after (> 500 ml) from the vaginal tract following childbirth. The blood loss (>500 ml) within 24 hours of childbirth is usually referred to as a primary postpartum and excessive blood loss after 1st day and puerperium 42 days is secondary postpartum hemorrhage [1]. Primary PPH is a more severe and life-threatening condition that contributes to the majority of mortality cases worldwide [2]. The estimated maternal mortality caused by primary PPH are 600, 000 cases and mostly occur in lower socioeconomic countries [3]. In Pakistan, the incidence of PPH is 34% [4]. The primary cause of PPH was uterine atony causing 75% to 90% cases of PPH [5, 6]. Other major causes are laceration of lower genital tract, previa, uterine inversion, accreta, and rupture uterus.

Maternal complications such as acute tubular necrosis, anemia, renal shutdown, shock, and disseminated intra vascular coagulation (DIC) were caused by postpartum hemorrhage. PPH management includes multiple blood transfusion associated complications such as bladder injury, respiratory distress, uterine packing, and sepsis during postpartum hysterectomy [7]. The higher prevalence of PPH is mainly due to lack of knowledge regarding antenatal screening significance in high risk patients and childbirth at home by unqualified birth attendants in developing countries [8]. Majority of complications associated with pregnancy and childbirth in Pakistan are caused by lack of intrapartum care and skilled antenatal during labor contributing to maternal and fetal loss [9]. PPH therapeutic and prophylaxis management could be done by various medical preparations such as PGF2 alpha, syntometrine, misoprostol, Oxytocin, and ergometrine. The PPH management includes underlying cause management and resuscitation. Other life saving measures include hysterectomy, compression sutures, uterine artery embolization, and internal iliac artery ligation [10]. Though, numerous studies have been done on causes, morbidity, and mortality of PPH. However, there is paucity of data on the frequency and clinical outcomes of postpartum hemorrhage in women. Therefore, the present study aimed to determine the frequency and clinical outcomes in women with postpartum hemorrhage.

METHODOLOGY

This cross-sectional study was conducted on 1346 patients who underwent vaginal delivery in the department of obstetrics and gynecology, Kausar Hospital, Khairpur Mirs from March 2021 to March 2022. The study included all the women who had postpartum hemorrhage following vaginal birth in the labor room or who were referred with primary postpartum hemorrhage. Patients with prior history of bleeding disorders and on warfarin were excluded from the study. Patients meeting the inclusion criteria were enrolled. For PPH frequency calculation, the overall deliveries occurred during the study period was recorded. Patients were investigated about prior antenatal care and previous antenatal record to verify the PPH causes in booked and unbooked patients. Subsequent to written informed consent, demographic details such as age, gestational duration, and parity were recorded on a predesigned proforma. Other details included labor duration, induced or augmented labor, episiotomy, spontaneous delivery, placental delivery time, and pad soaked since delivery were recorded. For the patient's hemodynamic status, vital signs were monitored and the uterus was examined for the confirmation of contraction. Uterine inversion or genital tract tear was tracked by exploration of genital tract. Radiological images confirmed the retained placental tissue. SPSS version 26 was used for data analysis. Quantitative variables were expressed as mean and standard deviation. Qualitative variables such as PPH different cause's i.e perineal tear, uterine rupture, uterine atony, uterus inversion, and retained placenta were described as frequency and percentage. All the descriptive statistics were done by taking 95% confidence interval and 5% level of significance.

RESULTS

Of the total 1346 patients, the prevalence of postpartum hemorrhage was 12.6% (n=170). Out of 170 PPH cases, the incidence of primary and secondary PPH was 138 (81.2%) and 32 (18.8%) respectively. The age-wise distribution of patients were as follows: 26 (15.3%) had <20 years, 62 (36.4%) in 21-30 years, 68 (40.1%) in 31-40 years, and 14 (8.2%) in >40 years. The incidence of primiparas, multipara, and grand multipara were 34 (20%), 58 (34.1%), and 78 (45.9%) respectively. The booked and unbooked patients were 56 (32.9%) and 114 (67.1%) respectively. Among 170 PPH patients, the incidence of spontaneous vaginal delivery, instrumental delivery, and cesarean section were 52 (30.6%), 56 (32.9%), and 62 (36.5%) respectively. The major causes of PPH was uterine atony, perineal and vaginal tears, and prolonged labor found in 112 (65.9%), 56 (32.9%), and 38 (22.4%) respectively. Figure-1 illustrates the incidence of primary and secondary PPH. Figure-2 demonstrates the age-wise distribution of patients. The prevalence of primiparas, multipara, and grand multipara are shown in Figure-3. Booked and unbooked patients are shown in Table-I. Incidence of spontaneous vaginal delivery, instrumental delivery, and cesarean section are shown in Figure-4. Different causes of PPH are shown in Figure-5.

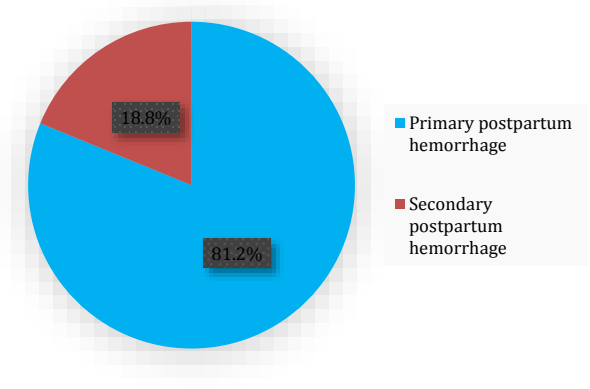

Figure-1: incidence of primary and secondary PPH (n=170)

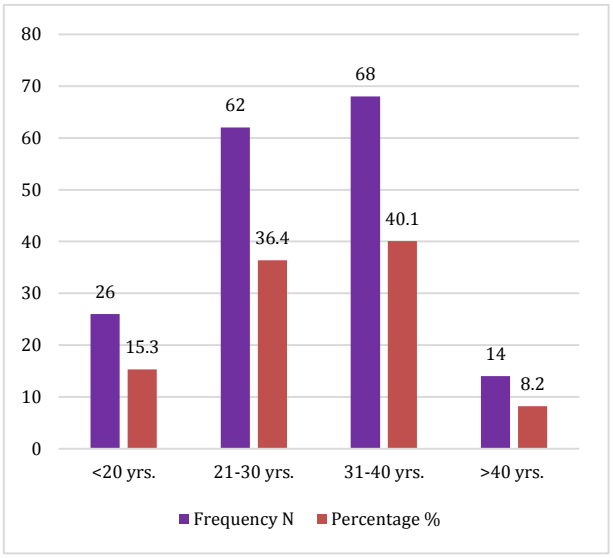

Figure-2: Age-wise distribution of patients (n=170)

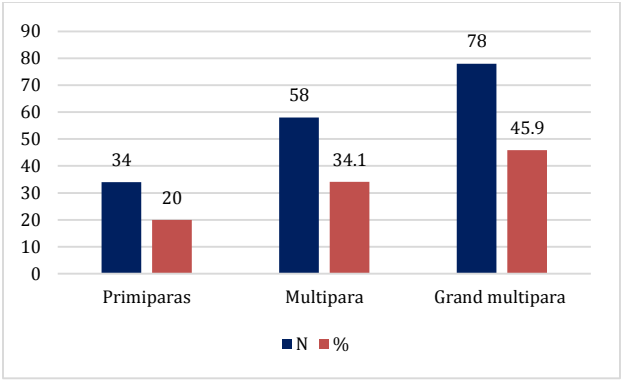

Figure-3: prevalence of primiparas, multipara, and grand multipara (n=170)

Table-1: frequency of booked and un-booked patients (n=170)

Patients	Frequency N	Percentages %
Booked	56	32.9
Un-booked	114	67.1
Total	170	100

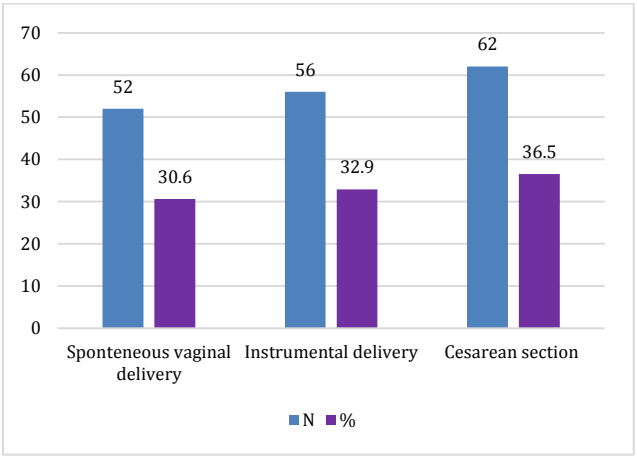

Figure-4: Incidence of spontaneous vaginal delivery, instrumental delivery, and cesarean section (n=170)

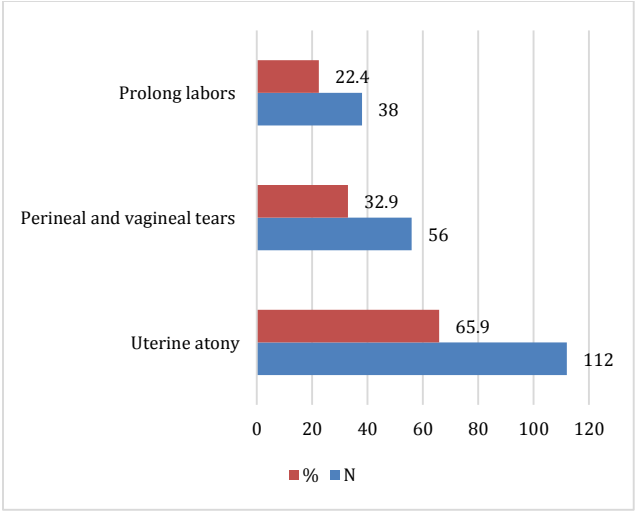

Figure-5: Different causes of PPH (n=170)

DISCUSSION

The present study mainly focused on frequency and clinical outcomes of women with postpartum hemorrhage and found that

the prevalence of PPH was 12.6% (n=170) among all the cases. There were 138 (81.2%) primary PPH and 32 (18.8%) secondary PPH among 170 postpartum cases. Majority of patients were in the age group 31-40 years. Unbooked patients were more susceptible to the development postpartum hemorrhage. Majority of the cases were grand multipara followed by multpara and primiparas. Majority of the women underwent cesarean section followed by spontaneous vaginal delivery and instrumental delivery. Uterine atony was the most prevalent cause for the development of PPH followed by perineal and vaginal tears and prolonged labor. A health care system's effectiveness can be reflected by maternal morbidities and mortality. The prevalence of PPH was 12.6% which is higher than 9.1% reported in a previous study [11]. Another study reported that primary postpartum hemorrhage was found in 41% patients [12] which is significantly higher than 2% to 11% in a several studies [13, 14].

The present study reported that 81.2% patients who developed PPH were unbooked due to lack of antenatal care facilities and were not properly examined due to PPH risk during labor. The proper pregnancy concern information, skilled monitoring, labor care, and delivery could be the reasons for lower PPH rate in booked patients [15]. The majority of patients who acquired PPH were unbooked, with 67.1% arriving after delivery. Diagnosis of patients at risk of acquiring PPH during labor by skilled personnel, as well as early treatment of the third stage, is therefore an effective prevention step. The key to minimizing the occurrence of PPH related to uterine atony is active treatment of the third stage of labor [16]. A Chinese based study reported that the prevalence of PPH complications was 6% and occurred after childbirth [17]. The overall incidence of PPH varied from 2% to 8% [18, 19].

The present study found that uterine atony, uterine rupture, lower genital tract laceration, uterine inversion, and retained placental tissues are different contributing factors for the development of postpartum hemorrhage. Uterine atony accounted for 65.9% cases of PPH which is higher than 57.6% and lower than 80% reported in previous studies [20, 21]. Another study reported that uterine atony was found in 58% cases of PPH [22]. The Oxytocin for active management of labor (3rd stage) lowered the prevalence of PPH by 40% as reported in a previous study [23]. Misoprostol (800 mg) per rectally could be used in basic health units or at home deliveries replacing the injectable version for PPH prophylaxis and can be stored at atmospheric temperature [24].

Grandmultiparity, twin birth, instrumental delivery, and prolonged active labor were all shown to be significant risk factors for the development of PPH in the present study. These findings were consistent with the findings of the other research [25]. Prolonged labor, ruptured uterus, obstructed labor, and uterine atony are prevalent among impoverished, sick, and malnourished women who give birth outside of a health center. Delivery at a well-supplied medical institution eliminates delays in recognizing difficulties, transporting, and providing necessary comprehensive care [26]. To reduce maternal morbidity and death, it is critical to identify the preventable causes that cause PPH and its effects. Standard prenatal care and experienced birth attendants are two critical roles in this scenario [27]. Primary PPH is an obstetrical condition that leads to Pakistan's high pregnancy complications and mortality rate. According to our findings, the prevalence of primary PPH in our health-care system is greater than previously reported. The major causes of this high rate of PPH are an absence of risk evaluation during antenatal care and delivery by untrained personnel.

CONCLUSION

The present study concluded that the prevalence of PPH was 12.6% among total cases. Primary PPH was more prevalent than secondary PPH and uterine atony was the most common cause followed by perineal and vaginal tears and prolonged labor. Additionally, unbooked patients were more susceptible to PPH. Risk factors assessment, unnecessary induction, and third stage labor active management can prevent the PPH.

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