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Original research article

COMPARISON OF PPH IN INDUCED WITH PROSTAGLANDIN E2 VERSUS SPONTANEOUS LABOUR

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Abstract: *Postpartum haemorrhage (PPH) remains a significant obstetric complication, leading to maternal morbidity and mortality. The impact of labour induction on the incidence of PPH compared to spontaneous labour is crucial for guiding clinical practices.* ***Objective:*** *To compare the incidence of postpartum haemorrhage in patients undergoing induced labour versus those experiencing spontaneous labour.* ***Methods:*** *A randomized controlled trial was conducted from April to September 2024 in the Obstetrics and Gynecology Department of DHQ Teaching Hospital, Mirpur AJK. A total of 70 patients with term singleton pregnancies were included, with 35 undergoing spontaneous labour and 35 experiencing labour induction. The incidence of PPH was recorded in both groups. Informed consent was obtained from all participants, and ethical approval was granted by the hospital's ethics committee.* ***Results:*** *Among 35 patients with spontaneous labour, 88.57% (n=31) had normal vaginal deliveries, 11.43% (n=4) underwent cesarean sections, and 8.5% (n=3) experienced PPH. In contrast, of the 35 patients induced into labour, 77.14% (n=27) had normal vaginal deliveries, 22.85% (n=8) underwent cesarean sections, and 31.43% (n=8) experienced PPH. The incidence of PPH was significantly higher in the induced labour group compared to the spontaneous labour group.* ***Conclusion:*** *Labor induction is associated with an increased frequency of postpartum haemorrhage. Induction should be reserved for cases with strong medical indications, and safer methods, such as prostaglandins, should be preferred over artificial rupture of membranes to minimize risks.*

Keywords: Inducement Of Labor, Uterine Atony, And Postpartum Hemorrhage.

Introduction

The most dangerous and potentially fatal side effect of both vaginal and cesarean deliveries is postpartum haemorrhage (PPH). Blood loss of more than 500 millilitres during vaginal delivery and 1000 millilitres with cesarean delivery is referred to as PPH. It is referred to as primary PPH if it happens within 24 hours of delivery. It is referred to as secondary PPH (1, 2) and (3) if it happens within 6 weeks and after 24 hours of birth. One of the biggest disparities in world health is maternal mortality from childbirth. Given that PPH accounts for 27.2% of maternal deaths in Pakistan (4), it is the primary direct cause of maternal morbidity and mortality, necessitating a thorough investigation of its causes and corrective action.

Although it is challenging to determine the precise prevalence, estimates indicate that PPH complicates 4% to 6% of all deliveries (5). PPH is a serious issue in our nation since the majority of women lack access to basic healthcare services, anemia, high parity, home births, and delayed referrals are all very common, and these women are unable to handle excessive and rapid blood loss, which can result in shock and death if treatment is delayed. Therefore, steps should be taken to reduce and prevent it, minimizing factors of iatrogenic risk.

About 20% of pregnant women will experience labour induction for several causes, making it one of the iatrogenic risk factors for PPH. The rate of inducing labour has nearly doubled in the past ten years; it is frequently performed for postdate pregnancy, premature membrane rupture, and diabetes-related pregnancies, and there is a growing trend toward elective induction at the mother's desire. (6, 7). Common induction techniques include oxytocin, prostaglandins, and artificial rupture of membranes (ARM). (6, 8), and (9).

My research aims to determine whether induced labour has a higher postpartum frequency than spontaneous labour. Therefore, the benefits of planned labour induction should outweigh the risks, it should be well-justified, and needless induction should be avoided.

Methodology

Over six months, from April 2024 to September 2024, this randomized control trial was carried out in the Obstetrics and Gynecology department of DHQ Teaching Hospital in Mirpur The sample size was 70(chosen to calculate sample size from WHO sample size calculator). Using non-probability convenience sampling, patients were recruited. They were brought in by OPD and emergency. Only patients with parity less than 5, ages 18 to 40, and deliveries at the Gyne department were recruited. Patients with bleeding disorders such as disseminated intravascular coagulopathy, aplastic anaemia, thrombocytopenia, instrumental delivery and patients with multiple pregnancies were excluded from the study, even though PPH patients were referred from many hospitals. Patients who met the study's inclusion criteria were enrolled following formal or informal written agreement. A short obstetrical history, the mode of spontaneous or induced labour onset, the mode of induction of labour, and the frequency of PPH were recorded. Performa was used to collect basic data. The study was sent for clearance to the hospital's ethical committee. We recruited 35 individuals induced via prostaglandin E2 and

35 patients with the spontaneous beginning of labour. PPH was found to occur frequently in both groups.

Results

Analysis of 70 women was done in this study, out of them 35 had spontaneous onset of labour and 35 had labour induced. Parity was considered separately in two groups of spontaneous and induced labour. It was observed that among primiparous women frequency of PPH was higher in patients with induced labour 6(40%) as compared to patients with spontaneous labour 2(20%), mode of delivery was also observed (Table 1). Among multigravida frequency of PPH was more in induced group 5(25%) as compared to 1(6.66%) in patients with spontaneous labour (Table 2) According to my research, the prevalence of PPH is higher in four primiparous women than in two multiparous women. The frequency of PPH is higher in induced labour 11 (31.43%) than in spontaneous labour 3 (8.5%), according to an overall comparison of spontaneous versus induced labour (Table 3).

Table: 1

Labour	Number of cases	Postpartum haemorrhage
Spontaneous	20	2(20%)
Induced	15	6(40%)
Total	40	8(20%)

Table: 2

Labour	Number of cases	Postpartum haemorrhage
Spontaneous	15	1(6.66%)
Induced	20	5(25%)
Total	30	6(20%)

Table: 3

Labour	Number of cases	Postpartum haemorrhage
Spontaneous	35	3(8.5%)
Induced	35	11(31.43%)
Total	70	14(20%)

Discussion

In Pakistan, postpartum haemorrhage is the primary cause of maternal death, and every effort should be made to lower it. The overall PPH prevalence in this study was 20%; a similar frequency of 7% (1) was found in another study conducted in Pakistan. This is comparable to quotes of 5 to 8% found in international literature. (10). The frequency of PPH in primiparous and multiparous women was examined independently in this study. Another study found that the incidence of postpartum haemorrhage was 2% in multigravida and 6% in primigravida, but the frequency of PPH was higher in primiparous women (2) (10.8%) than in multiparous women (2) (7.81%).Twelve The fact that the first labour is significantly longer than any subsequent labour is one of the causes of this. The likelihood of PPH rises as labour lengthens; the atonic uterus (6) is the most frequent result of prolonged labour.

PPH was more common in primiparous women who underwent induction of labour (40%) than in those who experienced the spontaneous onset of labour (20%). Similar findings were found in another study, which found that PPH was observed in 12.4% of patients with induced labour among primiparous women, compared to 7.6% of patients with spontaneous labor.8. Furthermore, the study's P value of 0.00 indicates a high significant link between primiparous women's spontaneous and induced deliveries.

Multiparous evaluation revealed that the induced group had a higher frequency of PPH (25%) than individuals with spontaneous labour onset (6.66%). According to this study, inducing labour in a multigravida should be done extremely carefully because there is a higher risk of PPH. Another study found that inducing labour in a multigravida is linked to a higher frequency of PPH than spontaneous labour. Additionally, the association between multigravida in induced and spontaneous deliveries is very significant, as indicated by the 8 P value of 0.00.

The study's analysis of the modes of delivery in the two groups revealed that the group with spontaneous labour had more normal vaginal deliveries than the group with induced labour, while the induced group had more caesarean sections and assisted deliveries (using vacuum or forceps). A study that compared the modes of delivery in induced and spontaneous labour was also carried out in India. It found that 5% of women in spontaneous labour had assisted delivery, 5% had a caesarean section, and 90% delivered normally, whereas 5% of patients in induced labour had assisted delivery, 7.5% had a caesarean section, and 87% had a normal vaginal delivery (1).

Conclusion

Another complication of induced labour that must be considered when considering induction is postpartum haemorrhage. When labour is induced, the frequency of PPH rises. As a result, induction of labour should only be used in the most dire circumstances. Prostaglandins are safer overall.

Declarations

Data Availability statement
All data generated or analyzed during the study are included in the manuscript.
Ethics approval and consent to participate.
Approved by the department Concerned. (IRBEC-THQGO-9972/23)
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Conflict of interest

The authors declared an absence of conflict of interest.

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References

1. Naz H, Sarwar I, Fawad A, Nisa AU. Maternal morbidity and mortality due to primary PPH--experience at Ayub Teaching Hospital Abbottabad. J Ayub Med Coll Abbottabad. 2008;20(2):59-65.
2. Malik S, Naz F. Grand multi parity-A Continuing Obstetric Risk in Pakistan. J Surg Pakistan. 2001;6:29-31.
3. Subtil D, Sommé A, Ardiet E, Depret-Mosser S. Postpartum haemorrhage: frequency, consequences in terms of health status, and risk factors before delivery. Journal de gynecologie, obstétrique et biologie de la reproduction. 2004;33(8 Suppl):4S9-4S16.
4. DHS M. Demographic and health surveys. Calverton: Measure DHS. 2013.
5. Combs CA, Murphy EL, Laros Jr RK. Factors associated with postpartum haemorrhage with vaginal birth. Obstetrics & Gynecology. 1991;77(1):69-76.
6. Hussain SS, Shafqat T. Frequency of postpartum haemorrhage in induced versus spontaneous labour. Pak J Med Sci. 2014;8:659-61.
7. Khireddine I, Le Ray C, Dupont C, Rudigoz R-C, Bouvier-Colle M-H, Deneux-Tharaux C. Induction of labour and risk of postpartum haemorrhage in low-risk parturients. PloS one. 2013;8(1):e54858.
8. Brinsden P, Clark A. Postpartum haemorrhage after induced and spontaneous labour. Br Med J. 1978;2(6141):855-6.
9. Magann EF, Evans S, Hutchinson M, Collins R, Lanneau G, Morrison JC. Postpartum haemorrhage after cesarean delivery: an analysis of risk factors. Southern Medical Journal. 2005;98(7):681-6.
10. Shaheen F, Jabeen J. Postpartum Hemorrhage: still a challenge. J Rawal Med Coll. 2003;7(7):77-81.