Original Article

Incidence of Primary Postpartum Haemorrhage in Induced Versus Augmented Labour. A One Year Review at FMH

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Objective: To compare the primary postpartum haemorrhage after spontaneous labour with induced and / or augmented labour.

Material and Methods: It is a comparative cross-sectional study, conducted in department of Obstetrics and Gynecology, Fatima Memorial Hospital, Lahore. This study was carried out over a period of one year from 1.7.11 to1.7.12.100 patients were included and divided into two equal groups. Group A, 50 patients having spontaneous labour and Group B, 50 patients having induced and/or augmented labour and delivered vaginally.

Results: Mean age of group-A was 26.4±3.48 and in group-B it was 26.88±3.64. Out of 50 patients in GROUP.B, 16 patients (42.1%) were induced with prostaglandin E1, in 22 patients (57.9%) prostaglandin E2 was used and in 12 patients augmentation with syntocinon done. 7 patients had PPH in group-B and prostaglandin E1 was used in 1 patient (14.2%), prostaglandin E2 used in 3 patients (42.9%) and augmentation with syntocinon was done in 3 patients (42.9%). Duration of third stage of labour was 7.84 minutes in group-A and in group-B it was 11.76 minutes. Mean blood loss after delivery in group-A was 271.0±125.3 ml while in group-B it was 383.0±3 16.1 ml which are statistically significant.

Conclusions: It is concluded from the study that primary postpartum haemorrhage occurs more in patients whose labour was induced and/or augmented as compared to the patients who had spontaneous onset of labour.The main aim of doing this study is to highlight the importance that all the obstetrician should wait for the spontaneous onset of labour and avoid undue inductions and its complicatios.

Keywords: Postpartum haemorrhage, induced labour, augmented labour.

Introduction

Primary postpartum haemorrhage is the most common form of major obstetric haemorrhage. It is the loss of 500ml or more of blood from the genital tract with in the 24 hours of the delivery of the baby. Secondary PPH is the abnormal or excessive bleeding from the birth canal between 24 hours and 12weeks postnatal.[1] The most important cause of primary postpartum haemorrhage is uterine atony which accounts for 90% of cases.[2] Obstetrics haemorrhage is one of the most common causes of major maternal morbidity and mortality and the most recent triennial report shows that these deaths have increased (from 7 in 1997-1999 to 17 in 2000-2002) due to a rise in postpartum haemorrhage.[3] Identified risk factors for postpartum haemorrhage are history of retained placenta, prior postpartum haemorrhage, antepartum haemorrhage, maternal blood disorders, multiple pregnancy, genital tract lacerations, fetal macrosomia (weight > 4kg), hypertensive disorders, instrumental deliveries, induction of labour, oxytocin augmentation and prolonged third stage of labour (>30 minute). Induction and augmentation are one of the risk factors for primary postpartum haemorrhage. It is found that mean postpartum blood loss is greater when labour is induced with prostaglandins and oxytocin and/or augmented with oxytocin infusion.[4]A study published in PakistanJournal of Medical Sciences conducted by Malik et al, reported the prevalence of primary PPH 6.1%.[5] The purpose of this study is to identify the risk of primary postpartum haemorrhage related to induction and augmentation of labour, so as to carefully monitor these patients in view of prophylactic measures for primary postpartum haemorrhage and avoid undue inductions thus reducing maternal morbidity and mortality.

Materials and Methods

It is Comparative cross-sectional study. Conducted in department of Obstetrics and Gynecology, Fatima Memorial Hospital, Lahore. It was carried out over a period of one year from 1.07.2011 to 1.7.2012.One hundred patients were included and divided into

equal groups 50 patients having spontaneous labour and 50 patients having induced and/or augmented labour and having normal vaginal delivery. Non probability purposive sampling was done. Pregnant women with ages between 20-35years at 37-42 weeks of pregnancies both Primigravida and multigravida with primary PPH were included.

Pregnant female with Multiple pregnancy, fetal macrosomia, polyhydramnios, chorioamnionitis, intrauterine deaths, history of antepartum haemorrhage, instrumental and traumatic vaginal delivery and previous history of postpartum haemorrhage and with medical disorders were excluded.

Results

7 patients (14.0%) had post partum in induce group compare to 2 patients (4.0%) in whom labour was spontaneous. 38 patients had included labour. In 16 patients (42.1%) prostaglandin E1 was used while in 22 patients (57.95) prostaglandin E2 was given 9 patients group-B 2 patients in group A developed PPH. 2% patients with spontaneous labour and 10% with induced and augmented labour required blood transfusion.

In my study mean duration of third stage of labour was 11.76±9.24 minutes in group B and 7.84±5.14 minutes in group A.

Table-1: Distribution of cases by demographic profile (n=100).

	Group A (Spontaneou Labour)		Group B (Induced and Augmented Labour)	
Age (years)	%	No	%	No
20-25	44	22	36	18
26-30	40	20	50	25
31-35	16	08	14	07
Total	100	50	100	50
Mode of admission				
Out patients deportment	28	14	34	17
Emergency	72	36	66	33
Total	100	50	100	50

Table-2: Distribution of cases according to Causes of induction or augmentation.

Pregnacy induced hypertension	Group- A		Group B	
Yes	No	%	No	%
No	04	08	09	18
26-30	46	92	41	82
Total	50	100	50	100
Prolonged pregnancy				
Yes	04	02	22	11
No	96	48	78	39
Total	100	50	100	50
Intrauterine fetal demise				
Yes	04	02	22	09
No	96	48	78	41
Total	100	50	100	50
Pre labour rupture of membranes				
Yes	06	03	20	10
No	94	47	80	40
Total	100	50	100	50

Table-3: Distribution of cases according to the agents used for induction of labour and PPH in group B.

Agents used for induction of labour			PPH	
	%	No	%	No
Prostaglandin E1	32	16	14.2	01
Prostaglandin E2	44	22	42.0	03
Augmentation with syntocinon	24	12	42.9	03
Total	100	50	100	07

Table-4: Distribution of cases by postpartum findings.

Postpartum Pallor	Group- A(Spontaneous Labour)		Group B (Induced and Augmented Labour	
	No	%	No	%
Yes	03	6.0	10	20.0
No	47	94.0	40	80.0
26-30	50	100.0	50	100.0
Total	50	100	50	100
Per vaginal clots				
Yes	04	02	22	11
No	96	48	78	39
Total	100	50	100	50
Postpartum blood transfusion				
Contracted	01	1	10	05
Relaxed	49	49	90	45
Total	100	50	100	50
Contractility of uterus				
Contracted	48	96	43	86
Relaxed	02	04	07	14
Total	100	100	50	100

Table-5: Distribution of cases by postpartum blood transfusion .

Postpartum Blood Transfution	Group-A (Spontaneous labour)		Group-B (Induced and augmented labour	
	No	%	No	%
Yes	01	02	05	20
No	49	98	45	80
Total	50	100	50	100

Table-6: Comparison of duration of third stage of labour (minute).

Group	Mean Time (min)	No
Group-A (Spontaneous labour)	7.84	50
Group-B (Induced and augmented labour)	11.76	50

Table-7: Comparison of bloodloss (ml) 24 hours.

Group	Mean blood loss (ml)	SD	%Age
Group-A (Spontaneous labour)	271.0	125.3	50
Group-B (Induced and augmented labour)	383.0	316.1	50

Discussion

PPH is the most common cause of maternal mortality and accounts for 25.0% of all maternal deaths worldwide[6] . There are 600,000 maternal deaths reported worldwide every year and 99% of these occur in developing world[7],*25% total* deaths in developing *to* countries are due to PPH. The prevalence is 34% in Pakistan[8]. Majority of these deaths occur within 1st *4* hours of delivery due to events in third stage of labour[9]. Uterine tone, retained tissue, trauma and thrombin deficiency are the major causes. The commonest cause is uterine atony responsible for 80% of cases[10]. When uterine fails to contract, it leads to continuous blood loss from placental site. Risk factors for uterine atony are prolonged first and/or second stage of labour, augmented labour, retained placenta, placenta accreta, multiple pregnancy, polyhydramnios and uterine fibroids. Multiparity and precipitate labour also promote uterine atony[11].Epidemiological studies suggest a link between induction and augmentation of labour and postpartum haemorrhage. In my study it was seen that *7* patients (14.0%) had postpartum haemorrhage in induced group compared to 2 patients (4.0%) in whom labour was spontaneous. This correlates with the review conducted by Brinsden and Clark[12] who reviewed 3674 normal deliveries and found that the incidence of postpartum haemorrhage was increased after induction of labour. The incidence among primipara was nearly twice that of spontaneous labour. In my study 38 patients had induced labour. In 16 patients (42.1%) prostaglandin E1 was used while in 22 patients *(57.9%)* prostaglandin E2 was given. This is also supported by Kelly et al[13].In this study 12 patients (24%) in group-B had augmentation of labour, out of these 3 patients had PPH. This is also supported by Haworth and Botha who compared amniotomy plus intravenous oxytocin against vaginal prostaglandin and found the higher rate of postpartum hemorrhage in amniotomy/oxytocin group.[14]. It was seen that 9 patients in group-B and 2 patients in group-A developed PPH. Both patients (100.0%) in group-A and 7 patients (77.8%) in group-B had relaxed uterus. This is comparable to other study giving atony as major cause (80%) [15].In my study 2% patients with spontaneous labour and 10% with induced and or augmented labour required blood transfusion. This is contrary to Francois et al[16] who say that blood transfusion during the treatment of PPH is rare. This was because most of the patients in my study presented through emergency which were unbooked and had poor reserves so they required blood transfusion. In my study mean duration of third stage of labour was 11.76±9.24 minutes in group-B and *7.84±5.41* minutes in group-A. It correlates with the study performed by Magannet al they performed a prospective observational study of 6588 vaginal deliveries. Postpartum hemorrhage risk was significant at 10 minute and at 30 minute, the best predictor for postpartum hemorrhage was a third stage of ≥ 18hrs[17].In this study 22% patients in induced labour group had prolonged pregnancy and 4% in spontaneous labour. This is with accordance of study of Condous.[18]

Conclusion

It is concluded from the study that primary postpartum haemorrhage occurs more in patients whose labour was induced and/or augmented as compared to the patients who had spontaneous onset of labour. The main aim of doing this study is to highlight the importance that all the obstetrician should wait for the spontaneous onset of labour and avoid undue inductions and its complications.

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