ORIGINAL ARTICLE

Role of Intravenous Syntocinon in Prevention of Primary Postpartum Haemorrhage

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ABSTRACT

Aims: To determine the effectiveness of Syntocinon in prevention of primary postpartum haemorrhage.
Study design: It was a randomized clinical trial.
Duration: From: 1st Jan 2012 to 30th June 2012 (six months).
Material and method: The patients of primary postpartum haemorrhage were recruited from the Department of Obstetrics & Gynaecology, Quaid-e-Azam Medical College, Bahawal Victoria Hospital, Bahawalpur.
Result: In this study, majority of the patients 60% (30) were between 25-30 years of age while 40% (20) were between 31-35 years of age in both groups. Twenty six percent (13) subjects with para-2, 40(20) with para-3 and 34% (17) with para-4 in Group-A while in Group-B, 30%(15) were found with para-2, 36%(18) with para-3 and 34%(17) with para-4. Regarding the status of post partum blood loss, in Group-A 52% (n=26) cases were found with <500 ml/dl blood loss and 48% (n=24) showed >500ml/dl while in Group-B, 40% (n=20) were found <500ml/dl blood loss and 60% (n=30) patients were recorded with bleeding >500 ml/dl.
Conclusion: I/V oxytocin is found more effective than I/M syntornetrine in prevention of post partum Haemorrhage.
Keywords: Primary Post Partum Haemorrhage, Prevention, Syntocinion, Syntometrine

INTRODUCTION

Primary post partum haemorrhage (PPH) is defined as the loss of greater than 500ml of blood from the genital tract in the first 24 hours following delivery.[1] This compares with 1000ml of blood loss for caesarean section.[2] It is one of the leading causes of maternal morbidity and mortality[3]. There are 600,000 maternal deaths reported world wide every year and 99% of these occur in developing countries[4]. In developing world, 25% maternal deaths are due to PPH, while the prevalence in Pakistan is 34%[5-7].

PPH has many potential causes but the commonest is uterine atony, responsible for 80% of cases[8]. When uterus fails to contract, it leads to continuous blood loss from placental site. Risk factors for uterine atony are prolonged first and/or 2nd stage of labour, augmented labour, retained placenta, placenta accreta, multiple pregnancy, polyhydramnios and uterine fibroids as well as multiparity and precipitate labour also promote uterine atony[9,10]. Other causes of primary PPH include retained placental tissues, uterine rupture, lower genital tract trauma, uterine inversion and consumptive coagulopathy[11,12].

The risk of dying from PPH depends not only on the amount and rate of blood loss but also the health of women, poverty, unhealthy life style, malnutrition and women's lack of control over their reproductive health, are some of major issues that have come to be accepted as inevitable and unchangeable.

Prevention of uterine atony is the key to reducing the incidence of PPH. The benefits of active management of 3rd stage are well documented. It decreases need for blood transfusion, post partum anaemia and less use of additional therapeutic uterotonic drugs[13,14].

Oxytocin, syntometrine, ergometrine, prostaglandin F2 alpha and misoprostol are different medical preparations used as uterotonics for prophylaxis and therapeutic management of PPH. With timely and appropriate use of uterotonic therapy, the majority of women with uterine atony can avoid surgical intervention. Stimulation of uterine contraction is usually achieved in the first instance by bimanual uterine massage and the injection of oxytocin (either intramuscularly or intravenously), with or without ergometrine.

Interventions including temponade test, application of compression sutures, internal iliac arteries ligation, uterine arteries immobilisation and hysterectomy are other life saving measures.

This study was planned to compare the efficacy of intravenous syntocinon with intramuscular syntometrine in prevention of primary postpartum

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haemorrhage in labouring patients with imminent vaginal delivery.

MATERIAL AND METHODS

Present study consisted of 100 cases with primary postpartum haemorrhage from 1st Jan 2012 to 30th June 2012 (Six months). Pregnant women (para 2 to 4), 25 to 35 years of age, having singleton pregnancy sonographically confirmed with gestational age of 36 to 39 weeks and having haemoglobin level of atleast 8 gm/dl were included in the study..

Those with previous history of PPH, multiple pregnancies, cesarean delivery, macrosomia, preeclampsia, diabetes mellitus, cardiac, pulmonary or bleeding/clotting disorders and taking anticoagulant were excluded from the study.

Patients were divided into two groups, each comprising of 50 cases. Group I were

After approval from the ethical review committee of the institution and informed consent from the patients, 100 patients were included in the study who fulfilled the inclusion criteria. These patients were admitted in Gynaecology Unit, Bahawal Victoria Hospital & Jubilee Hospital (attached to Bahawal Victoria Hospital), Bahawalpur through outpatient and emergency departments. The patients were explained about the study purpose along with merits and demerits of both drugs. Information like age, gestational age, parity and address was obtained.

The study participants (patients) were divided into Group-A or B by lottery system, each group comprising of 50 patients. The patients in Group-A received 10 units of syntocinon intravenously and in Group-B 2ml of syntometrine were given intramuscularly at the delivery of anterior shoulder of baby. (Syntometrine is combination of oxytocin 5 i.u. and ergotamine 0.5 mg).

Blood loss was estimated objectively after the delivery of baby and by squeezing the soaked pads and quantifying the amount of blood clots in a kidney tray of standard size to be equal to 500 ml. Any haemorrhage within first 24 hours after delivery was recorded Blood loss <500 ml were labeled as efficacy +ve. Information was collected through specially designed structured proforma.

The collected data was analyzed using SPSS version 12.0. Frequency and percentages (%) were calculated for control of blood loss for both groups and presented in tabular and diagrammatic form. Continuous variable like age, parity were presented as mean and S.D. Cross tabulation were performed for study variable i.e. blood loss, any difference noted were subjected to statistical significance. Chi-square test was used as test of significance as variable (blood loss) under study was qualitative in nature. A p value less than 0.05 was considered significant.

RESULTS

In this research work, table No. 1 shows the distribution of the patients according to their age group, majority of the patients 60%(n=30) were recorded between 25-30 years of age while 40% (20) were found between 31-35 years of age in Group-A. The mean age was 29.79±2.84. In Group-B, majority of the patients (62%) were between 25-30 years of age while 38% (19) were between 26-35 years of age. The mean age was 29.56±2.696.

Parity status of the subjects was analyzed and it was found that 13 (26%) were para-2, 20 (40%) were para-3 and 17 (34%) were para-4 in Group-A while in Group-B, 15 (30%) were found with para-2, 18 (36%) with para-3 and 17 (34%) with para-4. (Table No. 2).

Table No. 3 shows the status of post partum blood loss. In Group-A, 52% (n=26) females had less than 500 ml/dl blood loss and 48% (n=24) showed >500ml/dl while in Group-B, 40% (n=20) had <500ml/dl blood loss and 60% (n=30) patients had blood loss >500 ml/dl.

Table 1: Age Distribution of the Subjects

Age in years	Group-A(n=50)	Group-B(n=50)
25-30	30 (60)	31 (62)
31-35	20 (40)	19 (38)
Mean+S.D	29.79 + 2.840	29.56+2.696
Total	50 (100)	50 (100)

Table 2: Parity of the Subjects

Parity	Group-A (n=50)	Group-B (n=50)
Para 2	13 (26)	15 (30)
Para 3	20 (40)	18 (36)
Para 4	17 (34)	17 (34)
Total	50 (100)	50 (100)

Table 3: Status of Post Partum Blood Loss

Post-partum blood <500ml	Group-A (n=50)	Group-B (n=50)
Yes	26 (52)	20 (40)
No	24 (48)	30 (60)
Total	300 (100)	300 (100)

P Value: 0.02=<0.05

DISCUSSION

PPH remains one of the leading causes of maternal morbidity and mortality worldwide despite improvements in management strategies.[5] A recent population-based prospective study in Scotland and a study in Nova Scotia reported PPH to be the most important cause of major obstetric morbidity,

accounting for more than 50% of the overall incidence[15].

Active management of third stage of labor is the key to reducing incidence of PPH due to uterine atony[16] and involves administration of uterotonic drugs after early clamping and division of umbilical cord.[17] Besides this, identification of cases at risk to develop PPH during labour by experienced persons is also important, which is the shortcoming of this study, as we did not determine the causes of PPH.

Oxytocin, syntometrine, ergometrine, prostaglandin F2 alpha and misoprostol are used as uterotonics for prophylaxis and therapeutic management of PPH. With timely and appropriate use of uterotonic therapy, the majority of women with uterine atony can avoid surgical intervention. Stimulation of uterine contraction is usually achieved in the first instance by bimanual uterine massage and the injection of oxytocin (either intramuscularly or intravenously), with or without ergometrine.

The use of intramuscular ergometrine-oxytocin has been studied in a systematic review including six trials totaling more than 9,000 women.[18] The combination uterotonic agent was found to be more effective than oxytocin alone for preventing postpartum hemorrhage (NNT = 61).

Overall, the prophylactic use of oxytocin reduces postpartum hemorrhage and the need for therapeutic uterotonics. The ideal dose of oxytocin has not been directly studied. From the available data, the most effective dose appears to be 10 units administered intramuscularly or 20 units diluted in 500 mL of normal saline and given as an intravenous bolus. There seems to be no significant benefit to the prophylactic use of ergot alkaloids alone when compared with oxytocin alone or with the combination of oxytocin and ergometrine-oxytocin.

The result of our study reveal that intravenous syntocinon is better for reducing post partum blood loss in first 24 hours after vaginal delivery, as 52% subjects had less than 500ml post partum bleeding as compared to 40% administered with intramuscular syntometrine, which is in support of hypothesis of this study as well. Further, when we compared our results with a study conducted by Shaheen B[19] with the view to assess the effects of syntocinon vs syntometrine in reducing the risks of post partum haemorrhage and to observe the side effects after the use of two drugs as well, and found oxytocin alone is as effective as the use of syntometrine in prevention of post-partum haemorrhage but associated with significantly fewer maternal side effects, which is in agreement with this study.

Another study conducted by Abu-Omar A[20] with the view to determine safety and efficacy of the drugs, also showed that I/V oxytocin is more effective than I/M syntornetrine in prevention of post partum Haemorrhage. The limitation of this study was that we didn't compare side effects of both the drugs, as the above mentioned studies[19,20] had shown that intravenous syntocinon is associated with a significantly higher rate of unpleasant maternal side effects including nausea, vomiting, headache and rise in blood pressure. More detailed studies are required to study this aspect.

CONCLUSION

PPH is a serious hazard for maternal health and I/V oxytocin is more effective than I/M syntornetrine in its prevention. The side effects and complications of both of these drugs should not be overvlooked.

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