ORIGINAL ARTICLE

Primary Postpartum Haemorrhage Prevention by Misoprostol & Oxytocin

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ABSTRACT

Objectives: To determine the efficacy of rectal misoprostol combined with intravenous oxytocin for prevention of primary postpartum haemorrhage.
Study design: Prospective, observational study
Setting: Department of Obstetrics and Gynaecology, SIMS/Services Hospital, Lahore.
Duration of study: Six months (01-04-2011 to 30-09-2012)
Subjects and methods: Six hundred cases were included in this study. Patients were given 600mcg rectal misoprostol and intravenous oxytocin at the delivery of anterior shoulder of baby. These patients were followed in 24 hours for postpartum haemorrhage.
Results: In the study mean age of the patients was observed 27.1±4.9 years. Mean gestational age was found to be 37.2±5.8 weeks. According to parity distribution, primigravida were 220(37%), gravida 2-4 were 312(52%) and gravida 5-6 were 68(11%). Majority of the patients i.e., 554(92.3%) had blood loss <500ml and 46 patients (7.3%) had blood loss ≥500ml. Rectal misoprostol with intravenous oxytocin was effective in 554 patients (92.3%).
Conclusion: Rectal misoprostol combined with intravenous oxytocin is effective in the prevention of primary postpartum haemorrhage.
Key words: Postpartum haemorrhage, misoprostol, intravenous oxytocin.

INTRODUCTION

Postpartum haemorrhage is excessive bleeding from genital tract following the delivery of baby. Primary postpartum haemorrhage refers to the blood loss>500ml after the vaginal delivery and >1000ml in caesarean delivery. Another proposed definition for PPH is a 10% fall in haematocrit[1]. The incidence of primary postpartum haemorrhage following vaginal delivery is 5-8%[2]. Postpartum haemorrhage is a major cause of maternal morbidity and mortality in developing countries. At least one quarter of all maternal deaths is due to haemorrhage[3]. Prevention, early recognition prompts and appropriate intervention are the keys to minimize its impact[4]. Confidential enquiries have emphasized that deaths caused by PPH are due to "too little done too late"[5]. Uterine atony is one of the major cause of PPH. Misoprostol is a methylester (a synthetic analogue) of natural prostaglandin E1, which stimulates uterine contractions rapidly and powerfully. It has good safety profile & is cost-effective[6]. Rectal misoprostol is easy to administer and it has less side effects like nausea, vomiting and diarrhea[7]. Active management of 3rd stage of labour is superior to expectant management in terms of blood loss, PPH and other serious complications[8]. The role of prostaglandins in preventing PPH has been extensively studied In WHO multicentre randomized trial of misoprostol in the third stage of labour, 10 IU oxytocin I/M, I/V is preferable to oral misoprostol in AMTSL in hospital settings where active management is norm[9]. The misoprostol use for routine prevention of PPH has not been so successful, partly as high doses required for this indication, often result in troublesome side-effects[10] Rectal misoprostol 600mcg is effective with intravenous oxytocin infusion in minimizing blood loss. According to 2000 Cochrane review, the rate of postpartum haemorrhage ≥500ml was 5% for women receiving prophylactic misoprostol and intravenous oxytocin and 12% for those not receiving it[11]. In addition, there is high incidence of severe anemia during pregnancy in the developing countries like Pakistan because of nutritional, genetic and environmental factors. Even a small reduction in postpartum blood loss could be clinically relevant. The latest Confidential Enquiries into maternal deaths in UK has listed PPH as the third most common direct cause of maternal mortality[12].

MATERIAL AND METHODS

It was prospective study conducted in the Department of Obstetrics & Gynaecology, SIMS/Services Hospital, Lahore. The study was carried out over a period of six months from 01.04.2011 to 30.09.2011. During the mentioned

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period, 600 cases were studied according to inclusion criteria. All the data was entered in pre-designed proforma. All pregnant patients of age >18 years with singleton pregnancy and cephalic presentation SVD at term were included in the study. .Exclusion Criteria included Known hypersensitivity to prostaglandin and oxytocin, Polyhydramnios, multiple pregnancy & medical disorders. In the mentioned period, patients were given 600mcg rectal misoprostol and intravenous oxytocin at the delivery of anterior shoulder of baby by the obstetrician. These patients were followed in 24 hours for postpartum haemorrhage. Any blood loss ≥500ml was controlled according to departmental protocols. The efficacy was considered when blood loss was <500ml in 24 hours of normal vaginal delivery. All the data was entered in SPSS version 11.0 and analyzed.

RESULTS

Out of total 600 patients, 80 patients (13.3%) were <20 years of age, 420 patients (70%) were between 20-30 years old and 100 patients (16.7%) were ranged 31-40 years with mean age of 27.1±4.9 years (Table 1). Distribution of gestational age shows, 480 patients (80%) were between 37-39 weeks gestational age and remaining 120 patients (20%) were presented between 40-41 weeks of gestation. Mean gestational age was found to be 37.2±5.8 weeks (Table 2). According to parity distribution, primigravida were 220(37%), gravida 2-4 were 312(52%) and grand multigravida were 68(11%) (Table 3). Majority of the patients i.e., 554(92%) had blood loss <500ml and 46 patients (8%) had blood loss ≥500ml (Table 4). Rectal misoprostol with intravenous oxytocin was effective in 554 patients (92.3%) (Table 5).

Table-1: Age of patients

Age (Year)	**=n**	**%age**
< 20	80	13
20-30	420	70
31-40	100	17
Mean±SD	**27.1±4.9**	

Table 2: Gestational age

Gestational age (week)	**=n**	**%age**
37-39	480	80
40-41	120	20
Mean±SD	**37.2±5.8**	

Table 3: Parity

Parity	**=n**	**%age**
Primigravida	220	37
G2-G4	312	52
G5 or above	68	11

Table 4: Blood loss

Amount of blood loss	**=n**	**%age**
< 500 ml	254	92
≥ 500 ml	46	8

Table 5: Effectiveness of rectal misoprostol with intravenous oxytocin

Postpartum haemorrhage	**=n**	**%age**
Yes	554	92
No	46	8

DISCUSSION

About 20-30% of maternal mortalities in developing countries directly occur due to massive obstetrical haemorrhage[13]. In spite of marked improvements in management, early PPH remains a significant contributor to maternal morbidity and mortality both in developing countries as well as developed countries[14]. The situation is grave in developing countries like Pakistan. The two most important causes of immediate postpartum haemorrhage are hypotonic myometrium or uterine atony, lacerations of cervix and vagina.

The rectal route for misoprostol has been considered to have several practical advantages. Gastrointestinal side effects might be reduced, the administration of misoprostol to patients who are vomiting, unable to take oral medication, or under anaesthesia would be possible[15].

A study was conducted at Gynae unit III for the efficacy of misoprostol combined with intravenous oxytocine for the prevention of primary PPH. Grand multiparity is associated with increased incidence of PPH and majority of patients in current study were grand multipara. Same results were obtained in a study carried out at Aga Khan University and results showed 3 times more risk of PPH in grand multiparas as compared to non-grand multipara[16]. Another study carried out by Shojai et al compared the effectiveness of rectal misoprostol versus intravenous oxytocin in the prevention of postpartum haemorrhage. The women who received misoprostol had lower postpartum blood loss (408.0±140.0ml versus 480.0±200.0ml) and needed fewer additional oxytocin (8% vs 20%) compared with the women who received oxytocics. It is concluded from this study that rectal misoprostol might be used safely in the management of third stage of labour[17].

In current study, prevented primary postpartum haemorrhage observed in 92% patients when rectal misoprostol with intravenous oxytocin was administered.

CONCLUSION

Rectal misoprostol when combined with intravenous oxytocin proved effective in the prevention of postpartum haemorrhage. Its use is associated with less amount of blood loss, reduced need for additional oxytocin & blood transfusion and with negligible side effects.

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