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ORIGINAL ARTICLE

SUBLINGUAL MISOPROSTOL TO REDUCE BLOOD LOSS AT CAESAREAN SECTION

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ABSTRACT

OBJECTIVE(S): To assess the efficacy of sublingual misoprostol in decreasing intraoperative and postoperative blood loss, the need for additional uterotonic agents at caesarean delivery, occurrence and comparison of side effects between the two groups (misoprostol and oxytocin). **DESIGN:** A prospective randomized controlled study. **SETTING:** In a single hospital. **METHOD(S):** This was a prospective study of 100 patients booked at Rajah Muthiah Medical College and Hospital during the year 2012-2014 in pregnant women more than 37 weeks of gestation. The women's history, clinical examination, investigations were collected and the outcome of blood loss was measured between the two groups (misoprostol and oxytocin). **STATISTICAL ANALYSIS:** Determined by paired 't' test, independent sample 't' test and chi square test in appropriate places. **RESULTS:** The mean hemoglobin, temperature, blood loss during surgery, blood loss at 4 hours postcaesarean, side effects showed statistically significant difference ($p < 0.01$, $p < 0.01$, $p < 0.01$, $p < 0.01$, $p < 0.05$). **CONCLUSION:** From this study misoprostol is better and effective than oxytocin in reducing blood loss during caesarean section.

Keywords: Misoprostol, oxytocin, caesarean section, blood loss.

1. INTRODUCTION

In developed countries postpartum haemorrhage has become largely preventable and manageable. Postpartum haemorrhage accounts for about 100,000 maternal deaths every year¹. Almost all (99%) of deaths are in low and middle income countries and most deaths occur in the immediate postpartum period². Misoprostol is a prostaglandin E1 analog, inexpensive, can be absorbed by the following routes: vaginal, rectal, oral (sublingual or buccal)^{4,5}. Gastrointestinal symptoms and fever are the most common side effects^{6,7,8}. Misoprostol is more effective than oxytocin and methyl ergometrine in treatment of postpartum haemorrhage^{9,10}.

2. MATERIAL AND METHODS

All women undergoing emergency or elective cesarean section were eligible for the study irrespective of indication, previous cesarean or high-risk factor. Informed consent was taken from all subjects. Women were assigned randomly to receive either 400 µg misoprostol or placebo sublingually at

the time of cord clamping. Randomization was by computer-generated random numbers and the randomized allocations were kept secure in sequentially numbered opaque, sealed envelopes made at pharmacy containing either 400 µg misoprostol or placebo, which were opened in the operation room. At no time before the data analysis were the group assignments made available to anyone but the pharmacy. Intraoperative blood loss, Mean blood loss, Temperature Cephalopelvic Disproportion Contracted Pelvis Fetal Distress was calculated by measuring blood in the suction apparatus and sterile drapes before irrigation and by evaluating the blood in abdominal swabs and gauzes.

3. RESULTS

There was no significant difference in demographic data in relation to age. The estimated mean blood loss was significantly lower in misoprostol group (475.6 ± 65.13 ml), compared to oxytocin group (625.0 ± 70.69 ml, $P = 0.001$). There was significant difference in haemoglobin between the two groups, group A (0.76) and group B (1.53). It was higher in group B than group A. There were 10 patients (20%) in group B and 4 patients (8%) in group A who needed additional uterotonic drugs. Incidence of

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common side effects such as nausea , vomiting , diarrhea did not vary significantly in two groups, however shivering (24% versus 0%) and pyrexia (30% versus 10%, P=0.004) were more apparent in misoprostol group than in oxytocin group. It is inferred from table 2 that fetal distress is most common cause (group A N=30,60% and group B N=29,58%).

Table 1: mean blood loss , Haemoglobin and temperature

	SUBLINGUAL MISOPROSTOL	INTRAVENOUS OXYTOCIN
Mean blood loss	475.6+/- 65.13	625.0+/- 70.69
Haemoglobin	0.76	1.53
Temperature	0.668	0.204

Table 2: Indication for caeserean section

	SUBLINGUAL MISOPROSTOL	INTRAVENOUS OXYTOCIN
Cephalopelvic Disproportion	24%	24%
Contracted Pelvis	6%	18%
Fetal Distress	60%	58%

4.DISCUSSION

Postpartum haemorrhage is a serious condition responsible for at least one third of global maternal deaths¹. In majority of studies , misoprostol has been administered orally or rectally in dosages ranging from 400-1000 microgram and compared with oxytocin, ergometrine or no treatment^{12-14,19}. Misoprostol offers several advantages over oxytocin or ergometrine including a long shelf life, stability at room temperature, orally active. The sublingual route allows quick absorption of the drug. A few studies using sublingual misoprostol (400 microgram) have shown a similar efficacy to that of conventional oxytocin in prevention of postpartum hemorrhage following vaginal delivery^{16,17}. Shivering and pyrexia are most common side effects with misoprostol reported in about 30% of women in these studies^{16,17,19}.

5.CONCLUSION:

Sublingual misoprostol appears to be more effective than intravenous oxytocin in reducing postpartum blood loss during Caesarean section . In addition , misoprostol offers several advantages over oxytocin like long shelf life , stability at room temperature and oral administration which makes it as a suitable alternative management of third stage of labour

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