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Compare the Efficacy of Rectal Misoprostol with Intravenous Oxytocin in Managing the third Stage of Labour

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Abstract

Aim: To compare the efficacy and side effects of 800 micrograms rectal Misoprostol with intravenous oxytocin in managing the third stage of labour. *Materials and methods:* This study was done in 300 women undergoing full term vaginal delivery with or without episiotomy were enrolled to compare to efficacy and side effects of rectally administered Misoprostol with inj.oxytocin for management of III stage of labour. Study was done over a period 2 years, women enrolled and randomly distributed to two groups. 150 women in Group A received rectal Misoprostol and 150 women's in Group B received 10 IU IV oxytocin in drip. *Results:* Majority of subjects were between 21-26 years in both the groups. Majority of the subjects were primigravida 53% and 52% in Misoprostol group and oxytocin group respectively. Mean haemoglobin in two group was 8.86±1.05 gm/dI and 8.08±0.83 gm/dl in Misoprostol and oxytocin group 1-day postpartum. Mean PCV was 30.71±2.30 (Mean change=1.93±1.97) and 27.58±3.61 (Mean change = 3.77±4.4) respectively in misoprostol and oxytocin group. Duration of III stage in misoprostol group was 11.07±2.49 minutes compared to oxytocin group 11±3.93 minutes.5.33%, 2%, 4% and 2% had shivering, pain abdomen, temperature and diarrhea respectively in group A and 2% & 4.6% had shivering and fever respectively in Group B. All these were minor ailments subsided on their own without any intervention. No case of PPH was reported. *Conclusions:* Present study justify the use of per rectal misoprostol as an alternative to prophylactic injection oxytocin because of several advantages.

Keywords: Misoprostol, Postpartum haemorrhage, Oxytocin.

Introduction

Postpartum haemorrhage is a single largest and leading cause of severe maternal morbidity and mortality, not only in developing countries, but also in developed countries. Worldwide PPH is responsible for upto 125,000 maternal deaths per year and it is associated with morbidity in 20 million women per year [1]. The importance of prevention particularly when there is limited access to emergency medical facilities is therefore obvious. Drugs conventionally used for prophylaxis against PPH includes oxytocin, methyl-ergometrine and 15(s) 15 methyl PGE2α, prophylactic use of oxytocic agents after delivery of the infant has been shown to reduce the incidence by

40% [2]. The use of these uterotonic agents in the management of third stage of labour reduces the amount of bleeding and need for transfusion. But it is associated with side effects ranging from Nausea, Vomiting, and Hypertension to Postpartum Eclampsia, intracerebral haemorrhage, myocardial infarction, cardiac arrest and pulmonary oedema etc.

These agents are given by injections, which requires sterile needles and syringes, which is important consideration in era of hepatitis and HIV- Drugs like PGF2α and PFE_2 requires special storage condition (Refrigeration) and all not stable at high temperature. PGF2α is also known to be useful in preventing PPH, but these drugs also has to be used parenterally and they are expensive. Misoprostol, a PGE I. analogue marketed for peptic ulcer disease has proven to have uterotonic effects when administered orally rectally and vaginally. It has shelf life of several years and hence does not require specific conditions for storage. It does not raise blood pressure in doses up to 800 micrograms and can he effective alternative to methyl ergometrine for third stage of labour. Vaginal route is not feasible after delivery [3].

The rectal route is chosen for this study because of the practical advantage of the rectal route as it is ease of administration, Patient compliance is not required and Gastro intestinal side effects like diarrhea, nausea and vomiting may be less than oral route. Hence, this study has been undertaken to see for efficiency of rectal misoprostol in the third stage of labour in a prospective study, oral and rectal misoprostol has been suggested as effective in prevention of PPH. However, there are few reports of rectal misoprostol for third stage management. The present study is an attempt to evaluate the scope of using rectal misoprostol in comparison with intravenous Oxytocin which is being used by many clinicians in our country for the active managements of third stage. The rectal route used in this trial, if confirmed as effective and has several advantages. Pharmacokinetics of rectal administration has limited number of studies and its efficacy in controlling PPH is not properly studied.

Aims: To compare the efficacy and side effects of 800 micrograms rectal Misoprostol with intravenous oxytocin in managing the third stage of labour with regards to their influence on

- Duration of the third stage.
- The amount of blood loss during the third stage and the immediate post partum period.
- Side effects of the drug if any.

Permission for this study was obtained from the local ethical committee of the teaching hospital and the consent from the patients taken.

Materials and Methods

It is a prospective comparative study conducted on all antenatal women coming to Mamatha General Hospital for delivery. 300 women undergoing full term vaginal and instrumental delivery with/ without episiotomy at Mamatha General Hospital khammam were enrolled. The study was done for a period of 2 years from July 2010 to July 2012. Baseline data was for the 300 women were enrolled and randomly distributed to two groups.

Group A: 150 women were given misoprostol Tablet 800 µg rectally, immediately after the delivery of the baby, before delivery of the placenta.

Group B: 150 women were given routine injection oxytocin IV 10 international units in one unit ringer lactate soon after the delivery of the anterior shoulder or delivery of the baby.

Given within 1 minute of delivery of Baby before delivery of placenta.

Placenta was delivered by controlled cord traction in both the groups. Haemoglobin and PCV was done on admission and repeated on first postpartum day. Noted differences in values which individually reflect blood loss.

Inclusion criteria: All the women who are full term (37-42 weeks), with spontaneous and instrumental vaginal deliveries with or without episiotomy.

Exclusion criteria: All patients with severe anaemia, multiple pregnancy, malpresentation. Prolonged labour, precipitate labour, chroioaminionitis, abruption, Placenta previa, coagulation disorders, jaundice, previous history of PPH, genital trauma. IUD etc.

Drug allergy to prostaglandins or contraindicated as in case of hypertensive disorder, cardiac diseases and bronchial asthma. Routine Investigation for all pregnant women were undertaken as Haemoglobin, blood grouping and typing, random blood sugar, VDRL, HbsAg, HIV with consent, Urine Routine, USG-first trimester dating and second trimester and anomaly scan and Repeat Hb and PCV on day one after delivery.

Estimated blood loss among both the groups by calculating the difference in Haemoglobin and haematocrit percentage prior to delivery and 24 hours after delivery. Significant fall in haemoglobin is 2.5 gm/d1 or Haematocrit falls by 7.5%. Apart from the blood loss, in the present

study the following parameters were noted as Duration of III stage, Manual removal of placenta, Maternal soft tissue trauma, Blood transfusions, Need for additional oxytocics days and Side effects of the drugs.

Results

A comparative study consisting of 150 subjects for misoprostol (Group A) and 150 subjects for Oxytocin (Group B) was undertaken to investigate the effect of drug on blood loss, haematological parameters and side effects.

The mean age in misoprostol group (Group A) 21.98±2.65 years while in oxytocin group (Group B) was 22.50±2.97. Both groups were comparable with a p value >0.05 which is not significant. There is no significant difference in gravida distribution in both the groups. Parity is not significant change in both the groups. The mean gestational age was 38.7±1.56 in Group A and 39.23±1.27 in Group B. The p value <0.01 highly significant statistically. But Gestational age of all women was of term gestation clinically (Table 1).

The risk factors between both groups P value is not significant (Table 2).

This Table 3 shows that majority of babies born were in between 1.6 kg to 2.5 kg. Though the

Table 1: Demographic distribution in study

Age in year	Group – A Misoprostol (n=150)	%	Group – B Oxytocin (n=150)	%
≤20	62	41.33%	54	36%
21-25	74	49.33%	71	47.33%
26-30	14	9.33%	24	16%
>30	0	0%	1	0.66%
Mean±SD	21.98±2.65		22.50±2.97	
Inference	Chi square test p>0.05 not siginificant			
primigravida	80	53.3%	79	52.6%
Gravida 2	49	32.2%	54	36%
Gravida 3	17	11.3%	15	10%
Gravida 4	4	2.66%	2	1.33%
Gravida 5	0	0%	0	0%
Total	150	100%	150	100%
Inference	Chi square test p>0.05 not siginificant			
Gravida				
0	93	62%	92	61.3%
1	46	30.6%	52	34.6%
2	11	7.33%	5	3.33%
3	0	0%	1	0.66%
Inference	Chi square test p>0.05 not siginificant			
Gestational age (weeks)				
37 weeks	42	28%	12	8%
38 weeks	42	28%	42	28%
39 weeks	53	35.33%	55	36.6%
40 weeks	13	8.6%	41	27.33%
Mean±SD	38.74±1.56		39.23±1.27	

P value >0.05 highly significant

Table 2: Comparison of both groups in relation to risk factors

Risk Factors	Group A	Group B
Prom	7 (4.6%)	4(2.6%)
Polyhydramnios	2(1.3%)	2(1.3%)
Anemia	3(2%)	12(8%)
Multi	6(4%)	7(4.6%)
Breech	3(2%)	4(2.67%)
Occipitopsterior	1(0.67%)	1(0.67%)

p value >0.05 not significant

p value <0.01, highly significant, it did not effect the mode of delivery or blood loss except for liberal episiotomy in larger babies (Table 3).

Though the difference of Haemoglobin in both the groups was statistically significant but this difference in both the groups was clinically within normal limits.

Mean change in PCV in Group A was 1.93±1.97% and 3.77±4.44% in Group B. This difference in two groups is statistically significant p value <0.01, but clinically it was within normal limits (Table 4).

Mode of delivery in both the groups in majority was by full term vaginal delivery, 98.6% in Group A and 95.3% in Group B. One case was delivered by ventouse (0.66%) in Group B. 2 cases were delivered in both the Groups by forceps (1.34%). 4 cases were delivered by assisted breech delivery in Group B. The p value > 0.05 which is not significant. Both groups are comparable (Table 5).

This shows the negligible temperature changes

Table 3: Comparison of both groups in relation to weight of the baby

Weight of baby	Group A (n=150)	%	Group B (n=150)	%
<1.5	2	1.33%	4	2.66%
1.6-2.5	91	60.66%	65	43.3%
2.6-3.0	57	38%	66	44%
3.1-3.5	0	0%	14	9.33%
>3.5	0	0%	1	0.66%

p value <0.01 highly significant

Table 4: Comparison of haemoglobin and PCV between two groups

Haemoglobin (gm/ dl)	Group A: Misoprostol (Mean±SD)	Group B: Oxytocin (Mean±SD)	P value
Before Delivery	10.54±1.00	10.44±1.02	
1 day after delivery	8.86±1.05	8.08±0.83	
P value	<0.01	<0.01	<0.01
Mean change	1.68±0.063	2.36±0.06	
Test	Paired t test	Paired t test	Unpaired t test
	Comparison of PCV between two group		
Before Delivery	32.64±2.15	31.36±3.62	
1 day after delivery	30.71±2.30	27.58±3.61	
P value	<0.01	<0.01	<0.01
Mean change	1.93±1.97	3.77±4.44	
Test	Paired t test	Paired t test	Un-paired t test

Table 5: Comparison of mode of delivery between both the groups

Mode of delivery	Group A	%	Group B	%
FTVD	148	98.6%	143	95.3%
Ventouse	0	0%	1	0.66%
Forceps	2	1.34%	2	1.34%
Assisted Breech Delivery	3	2%	4	2.66%

Table 6: Comparison of temperature between two groups

TEMP(°F)	Group A: Misoprostol (Mean ±SD)	Group B: Oxytocin (Mean ±SD)	p value
Before Delivery	98.13±0.34	98.05±0.22	
1 hr after delivery	99.33±0.52	98.16±0.51	
P value	<0.01	<0.01	<0.01
Mean change±SD	-1.2±0.45	-0.11±0.45	
Test	Paired t test	Paired t test	Unpaired t test

Table 7: Comparison of duration of 3rd stage of labour between the two groups

IIIrd Stage of labour in minutes	Group A: Misoprotol	Group B: Oxytocin
Range	3 to 15	3 to 20
Mean ±SD	11.07±2.49	11±3.93
Inference	Unpaired t test	p >0.05 not significant

Table 8: Comparison of side effects between two groups

	Group A: Misoprostol		Group B: Oxytocin	
Nil	131	87.33%	136	90.66%
Pain abdomen	2	1.33%	3	2%
Shivering	8	5.33%	3	2%
Diarrhea	3	2%	0	0%
Fever	6	4%	7	4.66%
Vomiting	0		1	0.66%

Chi square test p>0.05 not significant

Table 9: Need of additional Oxytocics and blood transfusion between the groups

Additional Oxytocics	Group — A	%	Group — B	%
No	148	98.6%	146	97.3%
Yes	2	1.4%	4	2.7%
P value	>0.05 not significant			
Need for Blood Transfusions				
NO BTS	148	98.6%	148	98.6%
BTS	2	1.4%	2	1.4%

p value >0.05 not significant

among both the groups with a p value< 0.01 and mean change - 1.2±0.45 in Group A and -0.11±0.45 in Group B (Table 6).

The mean duration of III stage in Group A was 11.07±2.49 minutes and in Group B it was 11±3.93 minutes. There is no significant difference in duration of third stage in both groups. The p value >0.05 which is not significant (Table 7).

The side effects were comparable between both groups. Commonest was fever which lasted for few hours. All the side effects were self limiting, needed no interventions (Table 8).

In Group A 1.4% patients and 2.7% patients in Group B needed additional oxytocics. The p value >0.05% which is not significant. That is the need for additional oxytocics was negligible (Table 9).

Out of 150 patients, 2 patients only required blood transfusions in both the groups i.e., only 1.4%, 98.6% did not need blood transfusions in both the groups. The p value >0.05 which is not significant (Table 9).

Discussion

Distribution according to AGE

The mean maternal age of presentation in the misoprostol group (Group A) was 21.98±2.65 years and in oxytocin group was 22.50±2.97 years. The difference in age in both groups is not significant. The women included in the present study had a maternal age ranging from 18-29 year majority of the women in both groups were in age groups 21-26 years. According to Steven Parson et al. [4] mean age was quoted as 25.7 in Group-A and 25.8 years in Group-B. Nisa MU et al. [5] quoted the mean age as 25.04 in Group-A and 26.38 in Group-B. According to Shreshta et al. [6] the mean age was 22.8 in Group A and 23.05 years in Group B.

Distribution according to Gravida

In the present study majority were primi gravida in both the groups. Primi 53% and multi 13.9% in Group A and Primi 52% multi 11.33% in Group B. According to shrestha et al. [6] 63% were primi and 37% were multi in group A and 62% were primi and 38% were multi in group B.

Relation to Parity

In the present study majority were para 1.55 in Group A and 1.7 in Group B. According to Parsons et al. [4] parity was 1 in both the Groups. In Nisa et al. [5] study mean parity was 2.5 in group A and 2.3 in group B. The p-value >0.05 which is not significant. According to shrestha et al. [6] mean parity was 1.55 in group A and 1.56 in group B p>0.05 which is not significant.

Distribution of gestational age

In present study the mean gestational age in Group A was 38.74±1.5 and in Group B 39.23±1.2. In parsons 4 study the mean gestational age in Group A was 37.1 and in Group B was 36.9 weeks. In Nisa et al. [5] study the mean gestational age in Group A was 38.1 and Group B was 38.7 weeks. In shrestha et al. [6] study the mean gestational age in Group A was 38.0±1.8 and Group B was 38.7±2.5 weeks. In Vaziri, F. et al. [7] study the mean gestational age in Group A was 38±1.5 and Group B was 39±1.52 weeks.

Predelivery haemoglobin

In the present study the mean predelivery haemoglobin (Hbl) was 10.54± 1.00 in Group A and 10.44±1.02 in Group B. In the Parsons [4] study the mean predelivery haemoglobin was 11.4 gm/dl in Group A and 11.4 gm/d1 in Group B. In the Nisa M et al. [5] study the mean predelivery haemoglobin was 16.58 gm/dl in Group A and 15.15 gm/d1 in Group B. In the shrestha et al. [6] study the mean predelivery haemoglobin was 11.7±1.5 gm/dL in Group A and 11.5±1.6 gm/dL in Group B. In the. Vaziri, F et al. [7] study the mean predelivery haemoglobin was 11±1.29 gm/d1 in Group A and 11±1.9 gm/d1 in Group B.

Table 10: Predelivery haemoglobin and Haemoglobin one day post partum with comparision to other studies

Predelivery haemoglobin	Group A	Group B
Present study	10.54±1.00	10.44±1.02
Parsons et al. [4]	11.4	11.4
Nisa et al. [5]	16.58	15.15
Shrestha et al. [6]	11±1.29	11±1.9
Vaziri, F. et al. [7]	11.7±1.5	11.5±1.6
Relation to Haemoglobin one day post partum		
Present study	8.86±1.05	8.08±0.83
Parsons et al. [4]	10.39	10.24
Nisa et al. [5]	16.18	14.84
Shrestha et al. [6]	10.7	10.5
According change in Haemoglobin one day postpartum		
Present study	1.68	2.36
Parsons et al. [4]	1.19	1.16
Nisa et al. [5]	0.404	0.375
Shrestha et al. [6]	1.07	1.09

Relation to Haemoglobin one day post partum

In the present study the mean Haemoglobin one day post partum was 8.86±1.05 in Group-A and 8.08±0.83 in Group-B. In Steven Parson et al. [4] study post delivery haemoglobin was 10.39 gm/d1 in Group — A and 10.24 gm/dl in Group-B. In Nisa M et al. [5] post delivery haemoglobin was 16.18 gm/dl in Group-A and 14.84 m/dl in Group-B. In shrestha et al. [6] study post delivery haemoglobin was 10.7 in Group A and 10.5 in Group A. The haemoglobin fall was very minimal in all the studies, least being in the Nisa M et al [5] study.

Distribution according change in Hemoglobin one day postpartum

The Change in haemoglobin one day post partum present study was 1.68 gm/dl in Group-A and 2.36 gm/di in Group-B. This was not clinically significant. In Steven Parson et al. [4] study it was 1.19 in Group-A and 1.16 in Group-B. In Nisa MU et al. [5] study it was 0.04 gm/dl in Group-A and 0.375 in Group-B which was very minimal in Shrestha et al. [6] study it was 1.07 gm/dl in Group A and 1.09 gm/d1 in Group B. The change in haemoglobin was insignificant in both the groups and is comparable to the above studies.

Distribution according to Third stage of labour (in minutes)

In Present study the third stage of labour was 11.07 minutes in Group-A and 11 minutes in Group-B that is almost equal and clinically not significant.

According to Parson et al. [4] it was 6.9 minutes in Group-A and 6.2 minutes in Group-B. In Nisa MU et al. [5] study it was 16.5 minutes in Group-A and 14.74 minuts in Group –B. According to shrestha et al. [6] it was 5.7±3.2 minutes in Group-A and 5.6±3.9 minutes in Group-B.

The third stage of labour was within normal limits in present and other studies. The time taken in Nisa M study [5] was little prolonged compared to other two studies which were due to low dose of misoprostol 600 µg in Group A and 5U oxytocin in Group B which was low compared to present study.

Distribution related to postpartum haemorrhage

In persons study [4] there was 1.3% of PPH in Group A and 3.5% PPH in Group B.

Nisa M et al. [5] quoted that in Group A 4% of the cases and in Group B 3. 6% cases had PPH. In shrestha et al. [6] study 4% in Group A and 6% in Group B. In Fauzia et al. [7] study 7% in Group A and 28% in Group B was noted. In present study there was no case of PPH. There was no case observed to have estimated blood loss >500 m1 clinically and no case had significant fall in PCV(10%) post delivery.

Parsons [4] stated that oxytocin group had more incidence of PPH compared to misoprostol group. Shrestha et al. [6] and Fauzia et al. [7] also stated that oxytocin group had blood loss ≥ 500 m1 compared to misoprostol group. They needed additional oxytocic and few blood transfusions. In present study blood loss was ≤ 500 m1 in both groups with a p value> 0.05 not very significant.

Distribution according to the need of additional Oxytocics

In the present study the need for additional Oxytocics was 1.4% in Group-A and 2.7% in Group-B. In Steven Parson et al. [4] was 4% in group-A and 8.48% in group-B. In Nisa MU et al. [5] was 10% in group-A and 9% in group-B. In Haque et al. 8 needed 6% in misoprostol group and no additional oxytocic in oxytocin group. Fawzy M et al. [9] quoted that 6% of misoprostol group required additional oxytocics and 7% of oxytocin group required additional oxytocics. The p value was >0.05 which was insignificant.

Table 10: Distribution according to the need of additional Oxytocicsand blood transfusion

Need of additional Oxytocics	Group A	Group B
Present study	1.4%	2.7%
Parsons et al. [4]	4%	8.5%
Haque et al. [8]	6%	No
Fawzy M, et al. [9]	6%	7%
According to the need for blood transfusion	Group A	Group B
Present study	1.4%	1.4%
Parsons et al. [4]	0.9%	2.3%
Nisa et al. [5]	0.002%	0.001%
Fauzia et al. [7]	7.3%	20%
Fawzy M, et al. [9]	5%	6%

In the present study, 1.4% of misoprostol group required additional oxytocics and 2.7% oxytocin group required additional oxytocics, p value>0.05 which is insignificant. This is comparable to above studies.

Distribution according to the need for blood transfusion

In the present study the need for blood transfusion was 1.4% in Group-A and 1.4% in Group-B. In Parson [4] study 0.9% in Group-A and 2.3% in Group-B. That is more blood transfusion was required in Group-B. In Nisa MU et al. [5] 0.002% in Group-A and 0.001% in Group-B. Fauzia et al. [7] in Group-A 7.3% cases and 20% in Group-B required blood transfusions. Fawzy M, et al. [9] quoted that 5% of cases misoprostol group required blood transfusions and 6% cases in oxytocin group with p value < 0.05 which is not very significant. Misoprostol group required less blood transfusions compared to oxytocin group in all the studies. The present study comparable to other studies.

Distribution according to the side effects

Shivering

In the present study 5.33% patients had shivering in Group-A and 2.0% of Patients had shivering in group —B. In the Steven parson et al. [4] study 7.5% of the patients had shivering in Group-A and 0.9% of the patients had shivering in Group-B. In the Nisa MU et al. [5] study 25% of the patients had shivering in Group-A and 4% patients had shivering in Group-B. In the Fawzy et al. [9] study 16% of the patients had shivering in Group-A and 4% patients had shivering in Group-B. In the Shrestha et al. [6] study 16% of the patients had shivering in Group-A and 4% patients had shivering in Group-B.

Nausea

In the Steven parson study [4] 0.5% patients had Nausea in Group-A and 1.9% of Patients had nausea in group —B. In the Nisa study [5] 0.5% patients had Nausea in Group - A and None of Patients had nausea in group - B. In the Fawzy M, et al. [9] study 7.0% patients had Nausea in Group-A and 4% Patients had nausea in group - B.

Vomiting

In the present study no patient had Vomiting in Group-A and 0.67% of Patients had Vomiting in Group—B. In the Parson et al. [4] study 0.5% patient had Vomiting in Group-A and 0.9% of Patients had Vomiting in Group- B.In the Nisa et al. [5] study 12% patients had Vomiting in Group-A and 2.0% of Patients had Vomiting in Group—B. In the Fawzy M, et al. [9] study 7.0% patient had Vomiting in

Group-A and 8.0% of Patients had Vomiting in Group—B.

Fever

In the present study 4% patients had Fever in Group-A and 4.6% of Patients had Fever in group —B. In the Parson [4] study 4.0% patients had Fever in Group-A and 1.9% of Patients had Fever in group —B. In the Nisa [5] study 15% patients had Fever in Group-A and 3% Patients had Fever in Group —B. In the Fawzy M, et al. [9] study 22% patients had Fever in Group-A and 16% Patients had Fever in Group —B. In the Vaziri, F7 study 18.7% patients had Fever in Group-A and 0.8% Patients had Fever in Group —B. In the Shrestha et al. [6] study 25% patients had Fever in Group-A and 10% Patients had Fever in Group — B.

Diarrhea

In the present study 2% patients had Diarrhea in Group - A and none of Patients had Diarrhea in Group - B. In the Nisa study [5] 5% patients had Diarrhea in Group-A and 1.6% Patients had diarrhea in Group B.

Pain Abdomen

In the present study 2% patients had pain abdomen in Group-A and 2% of Patients had pain abdomen in Group — B. In the Shrestha et al. [6] study 7.0% patients had pain abdomen in Group-A and 7.0% of Patients had Pain abdomen in group — B.

Bhattacharjee et al. [10] concluded that the use of misoprostol for mid trimester pregnancy termination is not contraindicated in women with Caesarean scar and is effective and comparable with those in women without scarred uteri. Shammas et al. [11] reached a conclusion that the use of Misoprostol in women with previous single or multiple caesarean sections was not associated with excess complications. Daponte et al. [12] evaluated the safety and efficacy of misoprostol regimen in women with previous multiple caesarean sections. This was a retrospective cohort study of women with more than one caesarean sec on who underwent termination of pregnancy (TOP) with 400 mμg of vaginal misoprostol followed by 200 mμg/6 h (max 800 mμg). They did not report any major complication and considered the use of misoprostol effective and safe for termination of pregnancy in women with previous multiple caesarean sections. We recommend more studies with larger population to study the safety and efficacy of misoprostol in patients with missed miscarriage and previous uterine scars.

Conclusion

The third stage of labour is a period of great potential hazard. Postpartum haemorrhage is a major obstetrical complication and is one of the prime causes of maternal morbidity and mortality. In India where most of the pregnant women are already anemic, even a small amount of blood loss may be of significance. Most of the deliveries in the peripheral areas are performed by traditional birth attendants who have little knowledge of giving intravenous injections of producing IV lines. Moreover, administrations of injection oxytocin at the time of delivery of anterior shoulder needs precise timing otherwise there are chances of placental entrapment. Also there is danger of transmission of various infections by the parenteral route.

Table 11: Distribution according to the side effects

Study	Group	Shivering	Fever	Nausea	Vomiting	Diarrhea	Pain abdomen
Parsons et al. [4]	A	7.5%	4%	0.5%	0.5%	-	-
	B	0.9%	1.9%	1.9%	0.9%	-	-
Nisa et al. [5]	A	25%	15%	0.5%	12%	5%	-
	B	4%	3%	0%	2%	1.6%	-
Fawzy M et al. [9]	A	16%	22%	7%	7%	-	-
	B	4%	16%	4%	8%	-	-
Vaziri, F et al. [7]	A	-	18.7%	-	-	-	-
	B	-	0.8%	-	-	-	-
Shrestha et al. [6]	A	16%	25%	-	-	-	7%
	B	4%	10%	-	-	-	7%
Present study	A	5.33%	4%	-	0%	2%	2%
	B	2.0%	4.6%	-	0.67%	0%	2%

The findings of the present study justify the use of per rectal misoprostol as an alternative to prophylactic injection oxytocin because of several advantages.

1. Ease of administration, no trained personnel is required.
2. It requires no storage conditions and has a shelf life of several years
3. It is cost effective.
4. Duration of III stage is not increased.
5. It is as effective as injection oxytocin in minimizing blood loss.
6. It is safe to administer and has no significant side effects.
7. Gastro intestinal side effects like vomiting are less as compared to oral Misoprostol and injection Methergin.
8. It is useful in women in whom I/V access is limited or in whom it is desirable to restrict I.V fluids.
9. It can be also used for postpartum haemorrhage especially in peripheral health centers where time taken to transfer to a higher center may sometimes prove fatal. The use of per rectal misoprostol as an agent to minimize III stage blood loss should therefore be encourage.

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