ORIGINAL RESEARCH

A study on the comparison of events in third stage of labour between misoprost and syntocinon group

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ABSTRACT
The third stage of labour is indeed the unforgiving stage of the labour and in it lurks more unheralded treachery than in both the other stages of labour combined.A normal casewithin a minute can become abnormal and successful delivery canswiftly turninto a disaster if neglected. An informed consent was taken from the patients who met the inclusion criteria. These women underwent a thorough general and systemic examination like cardiovascular system, respiratory system, per abdomen and per vaginal examination. The women were given either syntocinon(10U) intramuscular or per rectal misoprostol (600µg) at the delivery of anterior shoulder of foetus. In misoprostol group, additional oxytocics in the form of 10 IU, oxytocin in intravenous drip was required in 10 patients& retained placenta occurred in 0 patient.Average blood loss was found to be 236.9±119.9ml. In Syntocinon group, additional oxytocics in the form of 10 IU, oxytocin in intravenous drip was required 7 patients and retained placenta occurred in 0 patient.Average amount of blood loss was found to be 160.5±127.5ml.

Key words: Events in labour, misoprost, syntocinon

INTRODUCTION

The third stage of labour is defined as the interval from the complete expulsion of the foetus to the complete expulsion of the placenta and membranes and firm contraction and retraction of the uterus subsequently.[1]

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Obstetric tradition has set somewhat arbitrary limits on 3rd stage duration. The average duration of 3rd stage in singleton vaginal deliveries is found to be 6 minutes.[28]The 3rd stage usually lasts between 5 and 15 minutes, but any period up to 1 hour may be considered to be within normal limits.[29]The average duration is reduced to 5 minutes from 15 minutes with active management of labour. In about 3% of such women, the duration of3rd stage was more than 30 minutes, however with an increasing incidence of complications.[2]

Many life saving drugs have been discovered and used for the management of this stage of labour.

The potential in the treatment of post partumhaemorrhage was first suggested by Bygdeman and his associates in 1968 soon after the uterotonic action of these compounds was recognized.[3]

Drugs conventionally used for prophylaxis against PPH includes oxytocin, methyl ergometrine, and15 Methyl PGF2α. Prophylactic use of oxytocic agents after delivery of the infant has been shown to reduce the incidence by 40%.

Also stated that compared to the oral administration, vaginal administration takes longer time to reach the peak plasma level but it retains the high level for a longer duration. With oral administration it takes 12.5 minutes to reach the peak plasma level and falls steeply by 2 hours, where as with the vaginal route it takes nearly 1 hour to reach peak plasma level and declines only after 4 hours. [2]

According to the WHOmulticentricrandomised trial using oral Misoprostol with oxytocinthey concluded that oral Misoprostol was associated with significantly high incidence of side effects like shivering and rise in body temperature and hence oxytocin is preferred to 600 mg of oral Misoprostol in management of third stage of labour in hospital settings, but still Misoprostol has been suggested for the management of third stage of labour in developing countries, because it has strong uterotonic effects, can be given orally, inexpensive and does not need refrigeration.[4]

METHODOLOGY

Two hundredpregnant women at term with spontaneous onset of labour were included in the study and were randomly divided into 2 groups of 100 women each group A and group B were given per rectal misoprostol(600µg) and intramuscular syntocinon(10U)respectively at that delivery of anterior shoulder of foetus.

200 cases admitted to the above hospitals who fulfilled the selection criteria were included for the study. The study was conducted from 2011 to 2013

INCLUSION CRITERIA

All patientsin the age group of 19-<35 years, period of gestation ranging from 37-40 weeks and gravidity – both primi and multigravida, at term with spontaneous onset of labour were included in the study and subjected to vaginal delivery.

EXCLUSION CRITERIA

Multiple pregnancy, intrauterine foetal death, previous caesarean section, pregnancy induced hypertension, antepartum haemorrhage, heart disease, bronchial asthma, renal disease, liver disease, allergy to drug, and haematological disorders.

The selected cases with inclusion criteria was divided into 2 groups

Group A: Misoprostol 600µg was inserted per rectally immediately following birth of baby (100).

Group B: Injectionsyntocinon(10U) intramuscular was given at the delivery of anterior shoulder (100).

Each of the patients will be allotted to one of the groups by coloured coins method (self selection — random sampling method).

An informed consent was taken from the patients who met the inclusion criteria. These women underwent a thorough general and systemic examination like cardiovascular system, respiratory system, per abdomen and per vaginal examination.

The women were given either syntocinon(10U) intramuscular or per rectal misoprostol (600µg) at the delivery of anterior shoulder of foetus.

COLLECTION OF BLOOD

The blood loss during the third stage of labour and the was calculated by keeping a sterile kidney tray at the vulva after the delivery of foetus and collected bloodmeasured by a measuring jar and 'Estimated total blood loss'was noted down. If intravenous oxytocin was used during the second stage of labour, it was stopped immediately after delivery.

Blood clots were collected and weighed, and blood loss was calculated accordingly(1 gm of clot= 4ml of blood).

Length of third stage of labour, and side effects including nausea, vomiting, diarrhoea, shivering, and retained placenta were recorded. If uterine bleeding was more, than,additional oxytocicsif given (intra venous infusion ofoxytocin 5-10U,and intramuscular methergin 0.2mg)was noted.

Hemoglobin (Hb) in gm% was done at the time of admission to the labour room and repeated 48 hours after delivery.

A pretested proforma was used to collect the relevant information (like patients data, clinical information, investigation reports etc.) from each and every individual related from the cases.

Statistical analysis of the 2 groups was done by Chi-square test and t-test (normality test).

Chi-square test was used to analyse categorical data and t test for comparing means of two groups. A two tailed $p<0.05$ was considered statistically significant.

Results

Group 1 compromises of patients in whom misoprostol 600µg was given per rectally after delivery of anterior shoulder of baby

Group 2 compromises of patients in whom syntocinon 10U intramuscularly was given after delivery of anterior shoulder of baby

Table-1: Distribution of Cases

Group	No of cases	Percentage
Misoprost	100	50
Syntocinon	100	50

Table2: Age Wise Distribution of Total Cases

Age in years	Misoprost	syntocinon	Total	Percentage
19-22	27	37	67	32
23-26	42	51	93	46.5
27-30	31	12	43	21.5
Total	100	100	200	100
Mean Age±SD	24.9±3.2	23.7±2.5	24.3±2.9	

The maximum number i.e. 93 (46.5%) patients who came for delivery in labour rooms were in the age group of 23-26 years. 64 (32%) patients were in age group of 19-22 years and 43 (21.5%) patients were in the age group of 27-30 years. Mean age of patients was 24.3 years, with a standard deviation of 2.9 years.

Table3: Events in Iii Stage of Labour

Events	Misoprostol	Syntocinon
Use of additional oxytocics	10	7
Retained placenta	-	-
Average blood loss (ml)	236.9±119.9	160.5±127.5

In misoprostol group, additional oxytocics in the form of 10 IU, oxytocin in intravenous drip was required in 10 patients& retained placenta occurred in 0 patient. Average blood loss was found to be 236.9±119.9ml.

In Syntocinon group, additional oxytocics in the form of 10 IU, oxytocin in intravenous drip was required 7 patients and retained placenta occurred in 0 patient.Average amount of blood loss was found tobe 160.5±127.5ml.

DISCUSSION

In one of the study, Bamigboye*et al*[5] compared the effectiveness of rectal misoprostol with syntometrine in the management of third stage of labour. 491 low risk women in labour were randomly allocated to receive either misoprostol 400µg or syntometrine(0.5mg+5IU) 1 ampoule intramuscularly, and postpartum blood loss was estimated. The duration of third stage of labour, blood loss postpartum and hemoglobin estimation postpartum were similar in both groups. Postpartum diastolic hypertension was more common in the syntometrine group. [5]

Grestenfeld*et al* comparedrectal misoprostol(400µg)to intravenous oxytocin(10IU) for the management of third-stage of labour. In this study subjects were randomized to receive two tab of 200 µgm misoprostol per rectally. Blood loss was determined by estimation; measurement and change in haematocrit values from admission to post partum day one. A total of 325 women underwent analysis. By estimation, 21% of subjects and 15% of controls had postpartum haemorrhage (p = 0.17). By using measured blood loss they determined that 70 of 154 (46%) study subjects (Misoprostol group) and 61 of 161 (38%) control subjects (other group) had PPH. For 36 (23%) misoprostol subjects and 18 (11%) Ergometrine subject at least one additional agent was required to control bleeding (P = 0.004).

It was concluded that rectal misoprostol 400µg was no more effective than injectable uterotonic in preventing post-partum haemorrhage. [6]

Caliskan*et al* compared misoprostol 600µgm per rectally with conventional oxytocics in the treatment of third stage of labour. 1606 women were grouped to receive (1) oxytocin 10 IU plus rectal misoprostol (2) rectal misoprostol(400µg) (3) oxytocin 10 IU (4) intravenous methylergometrine(0.2mg). The main outcome measures were the incidence of postpartum haemorrhage and drop in Hb concentration from before delivery to 24hrs after delivery. Incidence of PPH was 9.8% in the group that received only rectal misoprostol therapy compared with 3.5% in group that received ergometrine (P = 0.00 1).

No significant differences were found among the 4 groups with regard to drop in haemoglobin. Additional oxytocics were required in group that received only rectal misoprostol therapy when compared with group that received oxytocin and ergometrine.

They concluded that rectal misoprostol was less effective than oxytocin or ergometrine for prevention of postpartum haemorrhage.[7]

Misoprostol may be considered for active management of third stage of labour as alternative uterotonic agent and for prevention of postpartum haemorrhage in areas where the appropriate storage conditions for injection ergot alkaloid and oxytocin are not possible. It may not, be as effective but does not require refrigeration. It has ease of rectal / oral administration and can be given to hypertensive patients. Ergometrine should not be used in women with hypertension.

Karen *et al*, [8]conducted 17 studies & there was an increased need for therapeutic uterotonic medications (NNH = 22) among the women receiving prophylactic rectal misoprostol(400µg) when compared with women receiving injectable uterotonic including intravenousErgometrine(0.2mg). Although prostaglandins are an effective treatment of postpartum haemorrhage because of the balance of risks and benefits, they currently have no role in the prevention of post partum hemorrhage. [8]

Vimala*et al*,[9]Similarly compared the efficacy and side effects of sublingual misoprostol and intravenous methyl ergometrine for active management of third stage of labour. 120 low risk pregnant women were randomized to receive either 2 tablets of misoprostol (200µg/tablet) sublingually or 1 ml of methyl ergornetrine(0.2mg) intravenous injection, after the delivery of the anterior shoulder of the baby. The main outcome measures were: need for additional oytocic drugs, blood loss > or 500ml, change in hemoglobin levels and side effects. Postpartum hemorrhage as defined by hemorrhage > or 500ml occurred in 3.1% of the women in the sublingual misoprostol group but none of the women in the methylergometrine group (p> 0.05). There was a need for additional oxytocic drugs in 5.0% and 8.3% after methyl ergometrine and misoprostol respectively (p> 0.05). The change in hemoglobin levels at 24 h postpartum were 0.8 and 0.7 gm% in methylergometrine and misoprostol group, respectively (p> 0.05). In the misoprostol group, 6.6% women developed fever >or=38 degrees C and 21.6% had shivering while in methylergometrine group none experienced these side effects. However, the incidence of other side effects like nausea, vomiting, headache and giddiness were similar in both groups. It

was concluded that sublingual misoprostol appeared to be as effective as intravenous methylergometrine in the prevention of postpartum hemorrhage.[9]

Lamont *et al*, [10] conducted aprospective randomized trial of Carboprost (125µg) and Syntometrine(5IU+0.5mg) for the prevention of PPH was conducted with approximately 400 deliveries. The study was discontinued at the time of interim analysis because of unacceptable gastrointestinal side effects. About 21% of women receiving Carboprost had diarrhea as compared to 0.8% in Syntometrine. [10]

Chuas*et al*, [11] Similarly did a study of prostaglandin 15 methyl PGF2α(125µg) and Syntometrine in PPH, profuse and frequent diarrhea was seen in prostaglandin 15 methyl PGF2α group. [12]

CONCLUSION

In misoprostol group, additional oxytocics in the form of 10 IU, oxytocin in intravenous drip was required in 10 patients& no case ofretained placenta.

In Syntocinon group, additional oxytocics in the form of 10 IU, oxytocin in intravenous drip was required 7 patients and no case of retained placenta.

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