International Journal of Medical Research Professionals
P-ISSN: 2454-6356; E-ISSN: 2454-6364
DOI: 10.21276/ijmrp

Original Research Article.

Prevention of Third Stage Bleeding by Using Misoprostol

Sabina Parveen[1]*, Md. Mahmudur Rahman[2], Mohd. Shamim Bin Shaid Khan[3]

[1]*Assistant Professor, Department of Gynae & Obs.,
US- Bangla Medical College & Hospital, Rupganj, Narayanganj, Dhaka, Bangladesh.
[2]Deputy Director (CS) & Program Manager (SD), CCSPD,
Directorate, General of Family Planning, Karwan Bazar, Dhaka, Bangladesh.
[3]MBBS, DLO, MS (ENT), Assistant Professor, Kurmitola General Hospital, Dhaka, Bangladesh.

ABSTRACT

Postpartum haemorrhage accounts for nearly 28% of maternal mortality in developing countries. This prospective study of third stage bleeding prevention was conducted among the 96 patients, who got admitted into the OBGY units of Dhaka Medical College Hospital for normal vaginal delivery. 96 patients were allocated to receive either 600 µg misoprostol orally (57 patients) or rectally (37 patients) 5 min after cord clamping and cutting. The primary objective was to find out whether there was any dissimilarity present between these two routes of misoprostol in case of blood loss in third stage of labor. A total of 59 patients received 600 mug of misoprostol orally, while 37 rectally. Both groups were comparable in demographic and parital data.

Keywords: PPH, Third Stage of Labor, Rectal Route.

***Correspondence to:**

Dr. Sabina Parveen,
Assistant Professor, Department of Gynae & Obs.,
US- Bangla Medical College & Hospital,
Rupganj, Narayanganj, Dhaka, Bangladesh.

Article History:

Received: 29-03-2019, **Revised:** 21-04-2019, **Accepted:** 25-05-2019

Access this article online	
Website: www.ijmrp.com	Quick Response code
DOI: 10.21276/ijmrp.2019.5.3.034	

INTRODUCTION

Third stage of labour is defined as the duration from birth of the baby until the complete expulsion of the placenta and membrane.[1] The normal case can be, within a minute be abnormal and successful delivery can be turned swiftly into a disaster unless prompt action is taken. Serious maternal morbidity and sometimes mortality can occur. The importance of prevention particularly where there is limited access to emergency medical facilities is therefore obvious. The WHO has recommended the active management of third stage of labour by:

1. Using uterotonic drugs
2. Control cord traction method
3. Uterine massage is effective in postpartum haemorrhage.

Potential problems for the use of drugs in developing countries include the need of protection from light as well as it requires refrigeration because agents are not stable at ambient temperature.

The majority (91%) of the delivery in our country takes place at home and trained health personal do not attend many of them. Someone is needed to inject this drug to the patients: such personals are not available particularly in the rural areas. But mother can be able to administer oral or per rectally without any skilled birth attendance.

Postpartum haemorrhage (PPH) mostly due to atony of the uterus, remains an important cause of maternal morbidity and mortality worldwide. Therefore prevention and treatment of PPH with uterotonics such as prostaglandins in an important tool in postpartum management.

Misoprostol is a cheap thermostable prostaglandin El derivate. It is a potent uterotonic. It is available in tablet form and can be administered orally, vaginally, rectally, or sublingually, with different pharmacokinetic profiles. The oral and sublingual route results in the fastest onset of action and strongest initial uterotonic effect. Rectally, there is a prolonged uterine contraction after a slow onset of action. On the basis of available literature it can be concluded that misoprostol is not the first choice for active management of third stage of labour, when conventional uterotonics are available.

As refrigeration of the drug poses a problem, nowadays misoprostol is the only thermostable uterotonic agent potentially available.

The primary outcome measure was whether the haemorrhage ceased within twenty minutes of administering when clinically recognised PPH. Active management of the third stage of child birth with uterotonic limits blood loss and reduce the risk of uterine atony/ postpartum haemorrhage (PPH), a major cause of maternal

morbidity and mortality. Because of its potent uterotonic effects, misoprostol has been studied for the prevention of PPH.[2-4] In a recent prospective study, misoprostol, 600ug orally, immediately after cord clamping, limited the estimated blood to less than 500ml in 94% deliveries.

Potential advantage of misoprostol includes well tolerated, its stability in light and room temperature, its low cost and easy administration as well as less side effects.[5]

In this study administration of misoprostal will be studied as for the prevention of third stage haemorrhage.

OBJECTIVES

General Objectives

Use of misoprostol in the prevention of third stage bleeding

Specific Objectives

1. To find out the general socio demographic characteristics of the patients
2. To find out the percentage of uses of oral and per-rectal misoprostol among the patients

METHODS

Place and Period of the Study: This study has been conducted among the patients who got admitted into the Gynae and Obstetric department of Dhaka Medical College Hospital (DMCH) for their delivery purposes. This was calculated over a period of three months extending from November 2010 to January 2011.

Study Design and Participants: It was a prospective study which was carried out among the patients who got admission into the gynae and obst. department of DMCH for the purpose of vaginal delivery. Total number of admitted patient with normal vaginal delivery during the study period was the population of this study (who fulfilled the inclusion and exclusion criteria) and each of the patients was a study unit.

Inclusion Criteria

a) Women at term with singleton pregnancy

b) Up to th birth order of pregnancy

Exclusion Criteria

a) Are those that considered risk factors for PPH:
   - I. Grand multiparity
   - II. Multiple pregnancy
   - III. IUD
   - IV. Placenta praevia
   - V. Polyhydramnios
   - VI. Pre-eclampsia, eclampsia
   - VII. Women with previous history of PPH
   - VIII. Coagulation abnormalities

b) Caesarean delivery

c) Others:
   - I. Known hypersensitivity to prostaglandin
   - II. Hb% less than 8gm/dl

Data Analysis: Collected data were edited during and after collection, coded, classified, tabulated, and checked further for any missing information. The data were analyzed using Statistical Package for the Social Sciences (SPSS) software.

Table 1: Distribution of the patient by age in per rectal and per oral users of Misoprostol tablet

Group of the age	Per rectal users		Per oral users	
	Frequency	Percent	Frequency	Percent
15-19 yrs	1	2.7	10	10.0
20-24 yrs	19	51.4	25	42.4
25-29 yrs	11	29.7	19	32.2
30-34 yrs	6	16.2	3	5.1
35-39 yrs	0	0.0	2	3.4
Total	37	100.0	59	100.0

Table 2: Distribution of patients by religion in per rectal and per oral users of Misoprostol tablet

Name of the religion	Per rectal users		Per oral users	
	Frequency	Percent	Frequency	Percent
Islam	32	86.5	52	88.1
Hinduism	5	13.5	7	11.9
Total	37	100.0	59	100.0

Table 3: Distribution of the patients with income in per rectal and per oral users of Misoprostol tablet

Income of the patients	Per rectal users		Per oral users	
	Frequency	Percent	Frequency	Percent
5001-10000 TK	26	70.3	55	93.2
10001-15000 TK	9	24.3	4	6.8
>15000 TK	2	5.4	0	0.0
Total	37	100.0	59	100.0

Figure 1: Distribution of the patients by parity in per rectal users of Misoprostol tablet

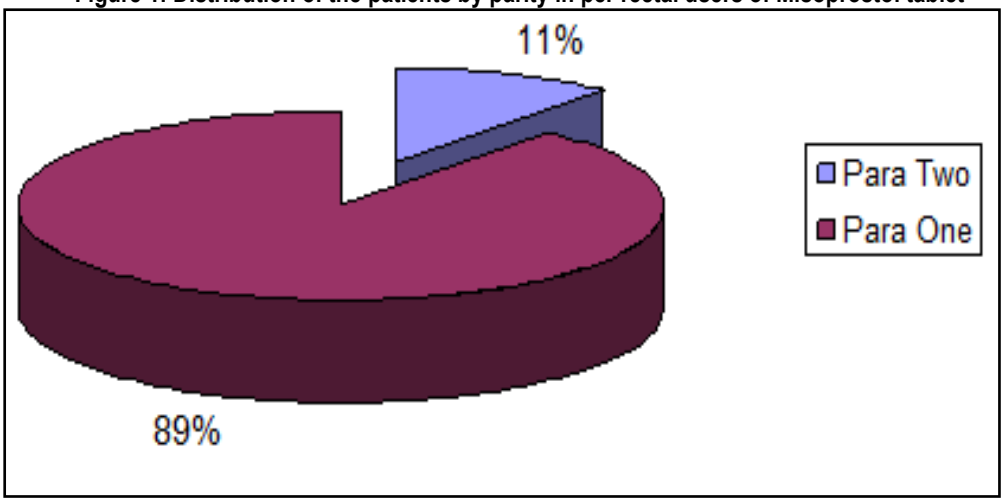
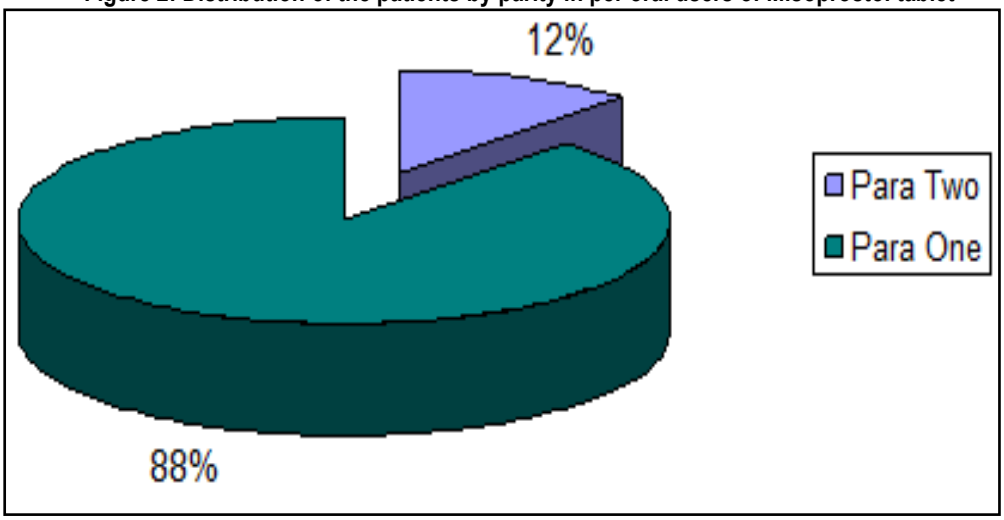


Figure 2: Distribution of the patients by parity in per oral users of Misoprostol tablet



RESULTS

Table 1 interprets the mean age of per rectal users was 24.46 years with standard deviation ± 3.66 years and the range was in between 19 yrs to 30 yrs. After categorized the age, it was found that maximum patients belonged to 20-24 yrs group (51.4%). The next highest number of the patients was in 25-29 yrs group (29.7%).

Table 1 also depicts the mean age of per oral users was 23.74 years with standard deviation (±) 3.97 years and the range was in between 18 yrs to 35 yrs. After categorizing the age, it was found that maximum patients belonged to 20-24 yrs group (42.4%). The next highest number of the patients was in 25-29 yrs group (32.2%).

Table 2 describes the majority portion of the patients was found to be Muslim (86.5%) in religion in case of using per rectal misoprostol tablet,. The rest of the patients were Hindu (13.5%), whereas in case of using per oral misoprostol the majority portion of the patients was found to be Muslim (88.1%) in religion. The rest of the patients were Hindu (11.9%).

Table 3 shows the mean income of patient was 9705.40 taka with standard deviation (±) 4034.22 taka and the range was in between 5500 taka to 20,000 taka and the maximum patients used to earn in between 5000 taka to 10,000 taka (70.3%) for per rectal users. The next highest group of earning was 10,000 taka to 15,000 taka (24.3%).

The mean income of patient was 7118.64 taka with standard deviation (±) 2055.14 taka and the range was in between 5500 taka to 15,000 taka and the maximum patients used to earn in between 5001 taka to 10,000 taka (93.2%) for per oral users. The rest of the patients were in the group who use to earn in between 10,001 taka to 15,000 taka (6.8%).

Figure 1 and 2 illustrates the mean parity of the patients with per rectal and per oral misoprostol users was 1.11 times and 1.12 times with standard deviation 0.31 times and 0.33 times respectively. About 89 percent and 88 percent of this patient group belonged to primi parous and remaining 11 percent and 10 percent had two para respectively.

DISCUSSION

It was already proved that Tablet Misoprostol helped to reduce active bleeding in the third stage of labor. The researcher did find only one literature to compare the present study. So the following discussion was done mainly on the data inherit in this study that might be area specific. The mean age of per rectal users of tablet Misoprostol was 24.46 years with standard deviation (±) 3.66 years and the range was in between 19 yrs to 30 yrs. On the other hand, the mean age of per oral users was 23.74 years with standard deviation (±) 3.97 years and the range was in between 18 yrs to 35 yrs. There was no significant difference found in between the mean ages of two different groups of tablet

Misoprostol users (p>.05). This might be area specific data. The majority portion of the patients was found to be Muslim (86.5% vs 88.1% in per rectal and oral groups respectively) in both groups of tablet Misoprostol users. It also might be due to majority of the population of Bangladesh was Muslim.

The mean income of per rectal users of tablet Misoprostol 9705.40 taka with standard deviation (±) 4034.22 taka and the range was in between 5500 taka to 20,000 taka. On the other hand, the mean income of per oral users was 7118.64 taka with standard deviation (±) 2055.14 taka and the range was in between 5500 taka to 15,000 taka. The per rectal Misoprostol user used to income more than that of the oral group patient (p<.000) and this feature might be non-specific due to the selection of the patient did not prepared on the basis of income of the patients and using same tablet form of the Misoprostol drugs.

The mean parity of the patients with per rectal misoprostol users was 1.11 times with standard deviation 0.31 times. Besides, the mean parity of the patients with per rectal misoprostol users was 1.12 times with standard deviation 0.33 times. More than eighty percent of the patient was primi para (89% vs 88%).

CONCLUSION

In this study it was found that the mean ages of the per rectal and oral Misoprostol users were 24.46 yrs with standard deviation 3.66 yrs and 23.74 yrs with standard deviation 3.97 NTS respectively. There was statistical relationship between these two groups (p>.05). Again the mean income of the both group were 9705.46 taka with standard deviation 4034.22 taka and 7118.64 with standard deviation 2055.14 taka (per rectal & oral groups respectively). The majority of the patients in both groups were muslims by religion. The mean parity of per rectal users was 1.11 para (±.31) and that in oral users was 1.12 (±.33) para. No relationship was observed in between two groups.

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Source of Support: Nil.

Conflict of Interest: None Declared.

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Cite this article as: Sabina Parveen, Md. Mahmudur Rahman, Mohd. Shamim Bin Shaid Khan. Prevention of Third Stage Bleeding by Using Misoprostol. Int J Med Res Prof. 2019 May; 5(3):156-59. DOI:10.21276/ijmrp.2019.5.3.034