



A COMPARATIVE STUDY OF SUBLINGUAL MISOPROSTOL 400 MG WITH INTRAMUSCULAR CARBOPROST 125 MG IN ACTIVE MANAGEMENT OF THIRD STAGE OF LABOUR

S Karpagam

MD, Assistant Professor, Dept. of O&G KAPV Govt medical college, Trichy. Corresponding author

P Bakiavathy

MD, Assistant Professor, Dept. of O&G KAPV Govt medical college, Trichy.

ABSTRACT

Objectives: To compare sublingual misoprostol 400 µg with Intramuscular carboprost 125 µg in active management of third stage of labour.

Materials and methods: 300 full term pregnant women delivering vaginally were randomly divided in two groups. The first group received 400 µg sublingual misoprostol and the second group received intramuscular carboprost 125 µg immediately after delivery.

Results: The mean duration of labour and blood loss in sublingual misoprostol group (3.05±0.80 hrs, 125.50±21.80ml) was less compared to the Intramuscular carboprost group (4.20±1.20 hrs, 194.70±30.40ml) and it was statistically significant (P < 0.0001).

conclusion: sublingual misoprostol is better than Intramuscular carboprost for active management of third stage of labour.

KEYWORDS : Misoprostol, carboprost, sublingual, third stage of labour

Introduction

The third stage of labour refers to the period from the delivery of the baby to the complete delivery of the placenta and membranes. Active management of the third stage of labour [AMTSL] goes a long way in the prevention of maternal morbidity and mortality. Postpartum hemorrhage [PPH] is responsible for 20% of maternal deaths in India^[1]. AMTSL reduces the third stage complication by 60%. AMTSL includes the use of uterotonics one minute after delivery of the baby, controlled cord traction and uterine massage^[2]. The choice of uterotonics for this purpose depends on the clinical judgement of the provider, availability of the drug and the associated benefits and side effects. Misoprostol is a uterotonic agent which is safe, cheap, easily available with a long shelf life^[3]. Carboprost is the synthetic 15-methyl analogue of prostaglandin F2α^[4], which is effective in the management of PPH not responsive to other uterotonics. The present study was carried out to compare sublingual misoprostol 400 µg with Intramuscular carboprost 125 µg in active management of third stage of labour.

Materials and methods:

The present study was conducted at KAPV Govt medical college hospital from June 2015 to December 2015 after approval from the Medical Ethics Committee. Three hundred pregnant women between 38 to 42 weeks of gestation delivering vaginally were selected and Informed consent was obtained. Women with eclampsia, previous cesarean section, asthma, epilepsy and heart disease were excluded from the study.

300 Women were randomly assigned to group A and B (150 patients in each group)

Group A - received sublingual misoprostol 400 µg after delivery of the baby

Group B - received Intramuscular Carboprost 125 µg after delivery of the baby

In both the groups, pulse rate and blood pressure were recorded both before and after the third stage of labor. The amount of blood loss (in ml) is estimated by separate receptacle kept close to the perineum in which blood was collected, after drainage of liquor and delivery of the baby, and was continued until the third stage of labour is completed, it was measured with a graduated measuring jar. Side effects such as wheeze, abdominal pain, nausea, vomiting, diarrhea, shivering, and pyrexia were recorded. If any sign of excessive blood loss appeared, other uterotonics such as methylergometrine / oxytocin were given immediately in both the cases.

Data are expressed as mean ± standard deviation. All outcomes were assessed using Chi-squared test and independent t-test, P < 0.05 was considered statistically significant. statistical analyses were done using SPSS version 16.0 statistical software.

Results:

The mean age and parity were comparable in both the groups (Table 1).

	Group A (misoprostol)	Group B (carboprost)	P value
Age(years)	23.50±4.8	23.70±6.20	>0.05
Mean parity	2.30±1.50	2.40±1.40	>0.05

The mean duration of the third stage of labor in the misoprostol group was 3.05±0.80 h and in the carboprost group was 4.20±1.20 h (P > 0.0001). The mean blood loss in the misoprostol group was 125.50±21.80 ml and in the carboprost group was 194.70±30.40 ml. The difference was statistically significant (P > 0.0001).

	Group A (misoprostol)	Group B (carboprost)	P value
Mean duration of third stage labour(h)	3.05±0.80	4.20±1.20	<0.0001
Mean amount of blood loss(ml)	125.50±21.80	194.70±30.40	<0.0001

The side effects were comparable in both the groups (Table 3).

	Group A (misoprostol)	Group B (carboprost)
Shivering	05	01
Headache	03	00
Pyrexia	10	02
Abdominal pain	10	00
Diarrhea	02	14
Nausea	04	02
Vomiting	04	05

Discussion:

Postpartum hemorrhage is one of the most important cause for maternal deaths. Active management of third stage of labor and the use of prophylactic oxytocics has reduced its incidence^[5].

Misoprostol acts by bringing about the contraction of uterus and promoting vasoconstriction at the target site (placental site)

produced by a well contracted and retracted myometrium, ultimately leading to hemostasis, hence, minimizing blood loss^[6]. Carboprost is a powerful uterotonic agent in the control of postpartum bleeding^[5].

The present study observed that the mean duration of the third stage of labor in the misoprostol group was less compared to carboprost group ($P > 0.0001$). Our results were consistent with the observations by Rekha Ramappa et al^[7], Mehta udayan et al^[8] and Nagaria tripti et al^[6]

The mean blood loss was less in the misoprostol group compared to carboprost group. Abd El-Moneim A et al^[9] concluding that sublingual misoprostol is a more effective uterotonic drug in management of third stage of labour.

The incidence of shivering, headache, abdominal pain and pyrexia was more in the misoprostol group^[10]. Incidence of vomiting and diarrhoea was more in the carboprost group.

Conclusion:

This study concluded that misoprostol 400 µg sublingual route is the most rapidly absorbable route, and a more effective uterotonic drug in the management of the third stage of the labor, with excellent safety compared to Intramuscular Carboprost.

References:

- Office of Registrar General, India, Ministry of Home Affairs, Government of India. Special bulletin on maternal mortality in India:2007-2009, June 2011.
- International Confederation of Midwives, International Federation of Gynecologists & Obstetricians. Joint statement: management of the third stage of labour to prevent post-partum haemorrhage. *J Midwifery Women's Health*.2004;49:76-7.
- Ho PC, Blumenthal PD, Gemzell-Danielsson K, Gómez Ponce de León R, Mittal S, Tang OS. Misoprostol for the termination of pregnancy with a live fetus at 13 to 26 weeks. *Int J Gynaecol Obstet*. 2007;99(Suppl 2):S178-81.
- Buttino L, Jr, Garite TJ. The use of 15 methyl F2 alpha prostaglandin (Prostin 15M) for the control of postpartum hemorrhage. *Am J Perinatol*. 1986; 3:241-243.
- Ambika S. Patil, Vibhavaree Dadavate and Vidya A. Thobbi Carboprost versus oxytocin for active management of third stage of labour *Al Ameen J Med Sci* 2016;9(3): 196-201.
- Nagaria Tripti 1, Sahu Balram 2, 400 µg oral Misoprostol versus 0.2mg intravenous Methyl ergometrine for the active management of third stage of labor *Obstet Gynecol India* Vol. 59, No. 3: May/June 2009 pg 228-234.
- Rekha Ramappa, Hema Mohan, Lepakshi B. Gurusiddappa Role of oral misoprostol 600 mcg in active management of third stage of labour: a comparative study with carboprost 125 mcg, intramuscular. *International Journal of Research in Medical Sciences*. 2015 Apr;3(4):905-907.
- Mehta Amiya Udayan, Dr. Parmar Prakash Hareshbhai A Study on efficacy and safety of the drug misoprostol 600 mcg for prevention of postpartum hemorrhage by different routes of administration in routine management of 3rd stage of labor; a randomized placebo controlled double blind study *Gujarat medical journal* aug 2014 vol 69 no 2.
- Abd El-Moneim A.Fawzy Active management of third stage of labor by intravenous ergometrine and rectal versus sublingual misoprostol *Alexandria Journal of Medicine* Volume 48, Issue 4, December 2012, Pages 381-385.
- Gulmezoglu AM, Villar J, Ngoc NT, Piaggio G, Carroli G, Adetoro L, et al. WHO multicentre randomized trial of misoprostol in the management of the third stage of labour. *Lancet*. 2001; 358:689-95.