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BRIEF COMMUNICATION

Evaluation of two uterotonic medications for the management of the third stage of labor

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It is perhaps surprising that, as yet, no consensus exists among clinicians concerning the best way to prevent postpartum hemorrhage. The present study was conducted as an attempt to evaluate the scope of 125 μg (note the dosage) of carboprost tromethamine given intramuscularly in comparison with intravenous methyl ergometrine.

Two hundred and fifteen parturients were randomly assigned to use either drug at the time of delivery of anterior shoulder of the baby. The outcome measures were duration of third stage, the measured blood loss after placental delivery and the incidence of side effects. Amount of blood loss was quantified by noting the increment in weight of standardised tampons which were placed high up in the vagina immediately after placental delivery. Weight of blood in grams was considered equal to volume in ml [1].

Table 1 Factors influencing amount of blood loss in third stage of labor

Confounding factors		Amount of blood loss in ml (mean ± S.D.)		Significance
		Methyl ergometrine	Carboprost	
Parity	Multi	211.3 ± 106 (53)	228.7 ± 107 (49)	$F=0.281$, $p=0.62$
Gestation	>40 weeks	220.4 ± 100 (23)	229.6 ± 141.2 (21)	$F=1.014$, $p=0.32$
Neonatal birth weight	≥3000 g	221.9 ± 98.6 (43)	230.6 ± 66 (28)	$F=0.88$, $p=0.45$
Prelabor rupture of membranes		200 ± 58.4 (14)	213 ± 95 (12)	$F=0.582$, $p=0.8$
Duration of labor	I+II stage >12 h	194 ± 105 (14)	262 ± 120.2 (5)	$F=7.2$, $p=0.09$
	III stage >5 min	221.3 ± 106.4 (8)	230.6 ± 66 (20)	$F=3.05$, $p=0.08$

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Table 2 Frequency of actual blood loss

Blood loss in ml	Methyl ergometrine ($n=107$)	Carboprost tromethamine ($n=108$)	Significance
	Cases (%)	Cases (%)	
<200 ($n=94$)	52 (48.6)	42 (38.9)	$\chi^2=2.14$; $p=0.34$
200–500 ($n=109$)	50 (46.7)	59 (54.6)	
>500 ($n=12$)	5 (4.7)	7 (6.5)	

Both groups were similar with regard to age distribution, parity and gestational age. Both groups were comparable regarding the labor outcomes in terms of occurrence of tears in the birth canal and neonatal birth weight (Table 1). The mean duration of third stage of labor was significantly less in the group receiving methyl ergometrine (3.9 vs. 4.3 min; $p=0.038$). The measured blood loss was less in the group receiving methyl ergometrine (mean: 214.1 ± 110 vs. 235.7 ± 99.3 ml, range: 75–550 and 125–550, respectively), similarly the number of cases with blood loss between 200–500 ml and beyond was lesser in the methyl ergometrine group (Table 2). However, no difference was found in the hemoglobin levels before and after delivery among either of the groups. Transient hypertension was seen in 1% of the methyl ergometrine group and none in the carboprost tromethamine group. Among the carboprost tromethamine group, there was a trend towards increasing blood loss as the duration of labor increased and there was a 20% incidence of diarrhea.

Thus, methyl ergometrine continues to be the better oxytocic available for the prevention of postpartum hemorrhage. As for carboprost tromethamine, its cost and side effect of diarrhea limits its use to cases where methyl ergometrine is relatively contraindicated.

Reference

[1] Makroo RN. Compendium of transfusion medicine, 1st edition. New Delhi: J Mithra & Company Limited; 1999. p. 98.