Safety and effectiveness of oral misoprostol for induction of labour in a resource-limited setting: a dose escalation study

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Background: Oral misoprostol as an induction of labour (IOL) agent is rapidly gaining popularity in resource-limited settings because it is cheap, stable at ambient temperatures, and logistically easier to administer compared to dinoprostone and oxytocin. A systematic review found low-dose oral misoprostol (≤25mcg) to be as effective and safe as vaginal dinoprostone with significantly fewer women requiring caesarean delivery [1]. However, currently limited data exist concerning the safety, effectiveness and feasibility of administering oral misoprostol in routine clinical practice in resource-limited settings such as Papua New Guinea (PNG) where the burden of maternal and perinatal complications remain high [2].

Objective: To assess the safety and effectiveness of oral misoprostol as an induction agent in women attending Modilon General Hospital in Madang Province of PNG.

Methods: As part of a prospective dose escalation study, women with a singleton pregnancy in cephalic presentation and an unfavorable cervix who gave written informed consent were administered oral misoprostol, commencing at 25mcg once every 2 h for 4 doses and increased to 50mcg once every 2 h for 8 doses within 24 h. The primary outcomes studied were i) the proportion of women delivering within 24 h of oral misoprostol administration, and ii) rates of maternal and perinatal adverse events.

Results: Of 6167 labour ward admissions, 209 women (3%) fulfilled the study inclusion criteria and underwent IOL. Overall, 74% (155/209 [95%CI 67.6- 79.9]) delivered within 24 hours. Most women (90%; 188/209; 95% CI [84.9- 93.5]) delivered vaginally with 86% (180/209) having a good outcome for both the mother and baby.

Table comparing maternal and perinatal outcome with different indications for induction of labour

Maternal and perinatal outcomes	Post-dates	PLROM	Pre-eclampsia	Fetal compromise*	Fetal death in-utero	Others	P-values
Number	117	45	28	10	7	2	
Preterm (<37 weeks)	0 (0)	5 (11)	11 (39)	0 (0)	0 (0)	1(50)	<0.001
Failed induction	11 (9)	5 (11)	2 (7)	3 (30)	0 (0)	0 (0)	0.33
Delivered within 24 hours	76 (65)	35 (78)	9 (32)	6 (60)	2 (29)	1 (50)	0.26
Duration of labour (hours)	9.0 [5.8-12.3]	6.4 [4.0-10.3]	9.3 [5.9-12.1]	9.8 [6.9-17.0]	10.0 [5.7-16.3]	14 [13.4-14.6]	0.07
Haemoglobin (g/dL)	10.1 [9.3-12.2]	10.5 [8.4-12.0]	10.3 [9.5-12.6]	10.0 [8.2-12.2]	8.0 [7.0-8.9]	7.4 [1.7-13.0]	0.15
Positive VDRL test	3 (3)	3 (7)	0 (0)	0 (0)	0 (0)	0 (0)	0.32
Maternal complications							
Postpartum haemorrhage	7 (6)	3 (7)	4 (14)	1 (10)	1 (14)	0 (0)	0.71
Retained placenta	0 (0)	2 (4)	0 (0)	0 (0)	2 (29)	0 (0)	<0.001
Uterine rupture/ hyperstimulation	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	-
Maternal death	0 (0)	0 (0)	1 (4)	0 (0)	0 (0)	0 (0)	0.26
Perinatal outcomes							
Apgar score ≤7 at 1 min	13 (11)	7 (16)	7 (25)	2 (20)	NA	0 (0)	0.04
Apgar score ≤7 at 5 min	3 (3)	2 (4)	5 (18)	0 (0)	NA	0 (0)	<0.001
Baby admitted to SCN	12 (10)	10 (22)	4 (14)	2 (20)	NA	0 (0)	0.51
Perinatal death	0 (0)	2 (4)	1 (4)	0 (0)	NA	0 (0)	0.33

* Includes severe intra-uterine growth restriction, NA= not applicable, PLROM= Pre-labour rupture of membrane

Conclusions: The oral misoprostol regimen for IOL in the present study is safe, effective and logistically feasible to administer in a resource-limited setting.

References:

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