International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 23s, 2025
https://theaspd.com/index.php

Mifepristone as an Adjunct for Cervical Ripening and Induction of Labor at Term: A Case Series

Akshita Bhandari[1], Bhuvana S.[2]
[1,2]Department of Obstetrics and Gynaecology, SriHER, Chennai, India
Corresponding Author: Dr. Akshita Bhandari, Email: akshita@example.com

Abstract
Background: *Mifepristone, a progesterone receptor antagonist, has been explored as a non-prostaglandin agent for cervical ripening and induction of labor. We report a retrospective case series evaluating its effectiveness at term.*
Methods: *Fifty women at 39–40 weeks gestation received a single 200 mg oral dose of mifepristone. Bishop score was reassessed at 24 h. If <6, prostaglandin E2 gel (dinoprostone) was administered; if ≥6, amniotomy and oxytocin augmentation were undertaken. Primary outcomes were change in Bishop score and mode of delivery.*
Results: *Mean Bishop score improved from 2.68 ± 0.82 to 6.60 ± 1.50 ($p < 0.0001$). Forty (80 %) delivered vaginally; ten (20 %) underwent caesarean section. No serious maternal or neonatal adverse events occurred.*
Conclusions: *A single 200 mg dose of mifepristone achieved significant cervical ripening in most term pregnancies, facilitating a high vaginal-delivery rate. Larger controlled trials are warranted.*
Keywords: *Mifepristone; Induction of labor; Cervical ripening; Term pregnancy; Case series.*

INTRODUCTION

Induction of labor (IOL) at term is common, with ~25 % of pregnancies requiring planned delivery. Unfavourable cervix remains a key barrier to timely vaginal birth. Standard mechanical and prostaglandin methods carry logistical and side-effect limitations. Mifepristone (RU-486) antagonises progesterone, promoting cervical softening and myometrial sensitivity to prostaglandins. Randomised trials have demonstrated faster onset of labor and reduced need for oxytocin compared with placebo or mechanical ripening [1-4]. This report describes our experience with oral mifepristone for IOL in 50 consecutive term pregnancies.

MATERIALS AND METHODS

Design: Retrospective observational case series conducted at SriHER, Chennai (January–March 2025).
Participants: Singleton, cephalic pregnancies at 39–40 weeks with reactive cardiotocography and Bishop score < 6. Exclusion criteria included hypertensive disorders, ante-partum haemorrhage, estimated fetal weight <2 kg or >4.5 kg, severe oligohydramnios, multifetal gestation, and contraindications to vaginal birth.
Intervention: All women received 200 mg oral mifepristone at 0 h. Bishop score was reassessed at 24 h. Women with Bishop <6 received 0.5 mg dinoprostone gel intracervically every 6 h (max 2 doses) until Bishop ≥6. Women with Bishop ≥6 underwent amniotomy and oxytocin augmentation as per unit protocol.
Outcome measures: Primary—change in Bishop score at 24 h, mode of delivery. Secondary—induction-to-delivery interval, maternal or neonatal adverse events.
Statistics: Paired-t test compared Bishop scores ($\alpha = 0.05$).

Results

Fifty women were analysed: 28 primigravidae (56 %) and 22 multigravidae (44 %). Mean gestational age was 39 + 2 weeks. Table 1 summarises key outcomes.

Parameter	Mean ± SD or n (%)	p-value
Pre-induction Bishop score	2.68 ± 0.82	
24-h Bishop score	6.60 ± 1.50	
Change in Bishop score	+3.92 ± 1.32	< 0.0001
Vaginal deliveries	40 (80 %)	
Caesarean deliveries	10 (20 %)	
Induction-to-delivery interval	12.4 ± 3.1 h	

No postpartum haemorrhage, uterine rupture, or neonatal intensive-care admissions were recorded.

DISCUSSION

Our findings align with recent trials reporting significant cervical ripening after a single 200 mg dose of mifepristone [1,2]. The 80 % vaginal-delivery rate compares favourably with placebo-controlled cohorts (60-75 %) [3,4]. Mechanistically, progesterone withdrawal increases prostaglandin synthesis and oxytocin receptor expression, explaining enhanced myometrial activity [5]. The absence of major adverse events corroborates previous safety data [6]. Limitations include retrospective design, lack of control group, and small sample size. Prospective randomised studies with cost-effectiveness analysis are needed before routine adoption.

CONCLUSION

A single 200 mg dose of oral mifepristone facilitated effective cervical ripening and a high rate of vaginal birth at term. Mifepristone may represent a useful adjunct for induction protocols when prostaglandin or mechanical methods are contraindicated or logistically challenging.

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