

Introducing Oral Misoprostol as an Induction of Labour Agent: Quality Improvement Project

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BACKGROUND

- NICE recommends oral misoprostol as an alternative IOL (induction of labour) agent.
- Associated with increased vaginal birth within 24 hrs (RR 0.78) vs intracervical prostaglandins¹
- Lower caesarean rates vs vaginal prostaglandins (RR 0.87)¹
- Royal London Hospital: 5,000+ births/year; 28% require IOL

AIM

- Improve patient flow & reduce inpatient stay.
- Enhance patient & staff experience.
- Ensure patient safety with cost-effective implementation

METHODOLOGY

- Oral misoprostol protocol: 25mcg every 2 hours, max 8 doses/day
- Cohorts: misoprostol (Aug–Sept 2024) vs dinoprostone (Aug–Sept 2023)
- Retrospective analysis of delivery mode and time from IOL to birth
- Data collected on maternal/neonatal adverse outcomes

DEMOGRAPHICS

- 86 patients** opted in to **misoprostol cohort**
- Maternal age 19-52 years; **53% patients between 25-34 years**, **67%** identify as **South Asian**
- 41% BMI 18.5-24.9**, 24% overweight and 23% obese
- 67% primips, 33% multips**
- IOL indications - reduced fetal movements (24%), gestational diabetes (16%) and postdates (14%)
- 85 patients** identified in **dinoprostone cohort**; maternal age 21-44 years
- 64% primips, 36% multips**

REFERENCES

¹ World Health Organization (2011). WHO recommendations for induction of labour. World Health Organization. <https://iris.who.int/handle/10665/44531>

² MedCalc Software Ltd. Relative risk calculator. https://www.medcalc.org/calc/relative_risk.php (Version 23.2.6; accessed June 9, 2025)

RESULTS

Vaginal Birth Rates

- Misoprostol: 57% (n=49) overall; 46.6% in primigravidas, 78.6% in multiparous patients
- Dinoprostone: 75% (n=64) overall; 64.8% in primigravidas, 93.5% in multiparous patients

Labour Progress & Misoprostol Dosing

- Average of 6 doses of misoprostol required before artificial rupture of membranes (ARM)
- 72% were ≥ 2 cm dilated upon transfer to the labour ward
- 88% of successful inductions required ≤ 8 doses

Timing of Vaginal Birth

- Vaginal birth within 24 hours: slightly lower with misoprostol RR 0.90 (95% CI 0.50-1.63, p=0.73)
- Vaginal birth within 48 hours: slightly higher with misoprostol RR 1.03 (95% CI 0.75-1.42, p=0.85)

Mode of Delivery

- Higher rate of emergency caesarean with misoprostol (RR 1.74, 95% CI 1.18–2.71, p=0.01)
- Induction failure: 9% (misoprostol) vs 2% (dinoprostone)
- Emergency caesarean for labour dystocia: 10% (misoprostol) vs 7% (dinoprostone)

Maternal & Neonatal Safety

- Misoprostol associated with fewer adverse outcomes overall: **hyperstimulation RR 0.13** (95% CI 0.17-1.05, p=0.06), **CTG abnormalities RR 0.43** (95% CI 0.20-0.92, p=0.03), **antepartum haemorrhage RR 0.99** (95% CI 0.06-15.55, P=0.99), **postpartum haemorrhage RR 0.65** (95% CI 0.41-1.03, p=0.07), **NICU admissions RR 0.41** (95% CI 0.08-2.05, p=0.28)
- No increased risk of serious adverse events, though higher rates seen for: **maternal pyrexia RR 1.47** (95% CI 0.26-8.56, p=0.68), **meconium-stained liquor RR 1.21** (95% CI 0.51-2.91, P=0.66), **low APGAR scores RR 1.95** (95% CI 0.18-21.16, P=0.58) - none statistically significant

DISCUSSION AND CONCLUSION

- Misoprostol is a patient-friendly oral option.
- Misoprostol introduction was a cost neutral measure
- Data suggests good safety profile with few adverse events but lower vaginal birth rate
- Additional choice for mode of IOL – liked by patients.
- Small cohort size & wide CIs limit conclusion strength.
- Pilot ongoing; expanding sample to strengthen data.
- 50mcg oral solution trial in progress.

