

Misoprostol induced Hyperpyrexia mimicking Sepsis: A Case Report

Authors: Ezung L, , Department of Obstetrics and Gynaecology, AIIMS Guwahati, Malakar H, , Department of Obstetrics and Gynaecology, AIIMS Guwahati, Tripathy S., Department of Obstetrics and Gynaecology, AIIMS Guwahati

ABSTRACT

Background: Misoprostol, a prostaglandin E1 analogue widely used for cervical ripening and labor induction, is known to cause transient pyrexia and shivering. However, high-grade hyperpyrexia mimicking sepsis is uncommon and may lead to unnecessary investigations and antibiotic exposure. Awareness of this adverse effect is essential to avoid misdiagnosis and overtreatment.

Case Presentation: A 28-year-old primigravida at 41+2 weeks of gestation underwent induction of labor for post-datism. Following an uneventful antenatal course, she received 25 µg intravaginal misoprostol. A second identical dose was administered after four hours. Ninety minutes later, she developed sudden high-grade fever (104.5°F), chills, rigors, tachycardia (132 bpm), and mild tachypnea. Blood pressure remained stable (110/70 mmHg) and fetal heart rate was reassuring (150 bpm). There were no signs of uterine tenderness or foul-smelling discharge. In view of suspected sepsis, complete blood counts, urine analysis, and blood and urine cultures were obtained and broad-spectrum intravenous antibiotics were initiated. The fever resolved spontaneously within seven hours without hemodynamic compromise. Labor progressed normally and she delivered a healthy neonate vaginally. All cultures remained negative at 48 hours; antibiotics were discontinued and the postpartum period was uneventful.

Conclusion: Misoprostol-induced hyperpyrexia is a rare but benign adverse effect that may closely resemble sepsis. Clinicians should recognize this presentation, particularly in the absence of other infectious features, to prevent unwarranted interventions. Vigilance, timely assessment, and expectant observation can minimize maternal morbidity and avoid unnecessary antibiotic use while ensuring maternal-fetal safety.

Keywords: Misoprostol, Hyperthermia, Labor, Induced, Sepsis, Obstetrics.

INTRODUCTION

Misoprostol, a synthetic prostaglandin-E1 analogue, is widely utilized in obstetric practice for labour induction, cervical ripening, medical management of miscarriage, and postpartum haemorrhage control due to its cost-effectiveness, thermal stability, and ease of administration [1,2]. As global reliance on misoprostol expands, especially in resource-limited settings, understanding its adverse-effect profile is essential [3].

While fever and shivering are expected side-effects of misoprostol, severe hyperpyrexia is uncommon [4]. Hyperthermia shortly after dosing can mimic intrapartum sepsis—a major cause of maternal morbidity and mortality worldwide, requiring prompt evaluation and treatment [5]. However, misdiagnosing drug-induced fever as sepsis may lead to unnecessary antibiotic use, investigations, healthcare expenditure, maternal anxiety, and contributes to antimicrobial resistance [6].

Misoprostol-induced fever is believed to occur due to prostaglandin-mediated elevation of hypothalamic temperature set-point and inflammatory cytokine release, including IL-1 and IL-6 [7,8]. A characteristic clinical pattern—rapid onset post-dose, high temperature spike, rigors, tachycardia, yet spontaneous resolution within hours without hemodynamic compromise—distinguishes it from infectious causes [9].

Despite sporadic reports, the phenomenon remains under-recognized, leading to clinical confusion in labour wards [10]. We present a case of profound fever shortly after intravaginal misoprostol for labour induction, initially treated as suspected sepsis, highlighting the importance of temporal association, monitoring, and antibiotic stewardship in obstetric practice.

Case Presentation

A 28-year-old primigravida at 41+2 weeks, with no comorbidities and normal antenatal investigations, presented for induction of labour for post-datism. Baseline vitals were normal. Bishop's score was 4. She received 25 µg intravaginal misoprostol. A repeat dose was administered after 4 hours.

Ninety minutes later, she developed fever 104.5°F, chills, rigors, tachycardia (132 bpm), and mild tachypnea. Blood pressure was 110/70 mmHg; fetal heart rate was 150 bpm. No uterine tenderness, foul discharge, or membranes rupture was present.

Suspecting sepsis, CBC, urine analysis, and cultures were obtained. Empiric IV broad-spectrum antibiotics were started. Fever resolved spontaneously within 7 hours. Maternal vitals normalized, fetal status remained stable, and she achieved vaginal delivery of a healthy newborn. Cultures were sterile; antibiotics were discontinued at 48 hours. Postpartum recovery was uneventful.

DISCUSSION

Misoprostol-induced fever is a recognised pharmacological effect linked to prostaglandin-mediated elevation of the hypothalamic thermoregulatory set-point, and to inflammatory cytokines such as IL-1 and IL-6 [7,8]. While mild pyrexia is common after misoprostol,

particularly with higher or repeated dosing, rapid-onset hyperpyrexia resembling sepsis remains a rare presentation and is therefore prone to misinterpretation in labour settings [4].

The timing in this case—onset within 1–2 hours of dosing, peak within several hours, and spontaneous resolution—is consistent with previously described misoprostol fever kinetics [9]. This stereotypical pattern, in the absence of sustained haemodynamic instability or other clinical features of infection, may help differentiate drug-induced fever from sepsis. In contrast, true obstetric sepsis generally exhibits progressive symptoms, organ involvement, or high inflammatory markers, and is often associated with ruptured membranes, chorioamnionitis, urinary infection, or systemic compromise [5].

Misdiagnosis can lead to unnecessary investigations, escalation of monitoring, and empirical antibiotic use, with consequences including cost burden, adverse drug effects, and antimicrobial resistance [6]. As misoprostol use increases globally, clinicians must remain cognizant of this adverse reaction and practise judicious antibiotic stewardship—balancing vigilance for sepsis with recognition of this self-limiting, medication-related fever effect [10].

Ultimately, careful observation of the temporal relationship between misoprostol dosing and symptom onset, alongside assessment of maternal and fetal wellbeing, can guide safe clinical decision-making and reduce avoidable interventions.

CONCLUSION

Misoprostol-induced hyperpyrexia is an uncommon but clinically important adverse effect that can closely resemble intrapartum sepsis, especially when associated with tachycardia and rigors [4,9,10]. In our patient, the abrupt onset of high-grade fever shortly after dosing, rapid spontaneous resolution, haemodynamic stability, sterile cultures and favourable maternal–fetal outcome strongly supported a diagnosis of drug-induced fever rather than true infection. Given the global burden of maternal sepsis on one hand and the growing threat of antimicrobial resistance on the other, clinicians must carefully integrate timing, clinical context and overall stability before labelling such episodes as sepsis and initiating broad-spectrum antibiotics [5,6]. Awareness of this characteristic pattern of misoprostol-related hyperpyrexia can improve diagnostic accuracy, support more rational antibiotic use, and help optimise safe, evidence-based intrapartum care.

REFERENCES

1. Tang OS, Gemzell-Danielsson K, Ho PC. Misoprostol: pharmacokinetic profiles and side-effects. *Int J Gynaecol Obstet.* 2007;99(S2):S160-S167.
2. Hofmeyr GJ, et al. Misoprostol for induction of labour. *Cochrane Database Syst Rev.* 2022;5:CD000941.
3. Weeks A. Misoprostol in obstetrics and gynaecology. *Obstet Gynaecol.* 2017;19(2):111-117.
4. Villar J, et al. Misoprostol dose-related fever and shivering. *Obstet Gynecol.* 2004;103:1006-1013.
5. Bonet M, et al. Maternal sepsis: epidemiology and management. *Lancet.* 2021;397:1558-1570.

6. WHO. Global antimicrobial resistance report. World Health Organization; 2022.
7. Dinarello CA. Interleukin-1 and fever. *N Engl J Med.* 1998;338:1216-1226.
8. Langenbach R, et al. Prostaglandins in fever pathophysiology. *J Clin Invest.* 1995;95:1684-1690.
9. Hsiung R, et al. Transient hyperthermia after misoprostol. *Obstet Med.* 2019;12:140-142.
10. Bugalho A, et al. Misoprostol complications in labour induction. *Int J Reprod Contracept Obstet Gynecol.* 2019;8(4):1449-1454.