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A Comparative Study on Effectiveness and Safety of Loading Oral Misoprostol Followed by Maintenance Vaginal Misoprostol Versus Only Vaginal Misoprostol for Induction of Labor

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Abstract: ***This comparative observational study evaluates the effectiveness and safety of loading oral misoprostol followed by maintenance vaginal misoprostol versus only vaginal misoprostol in labor induction. A total of 110 patients were randomly assigned into two groups. Group A received oral misoprostol followed by vaginal administration, while Group B received only vaginal misoprostol. Outcomes such as uterine contractions, Bishop score, fetal heart rate changes, and neonatal outcomes were measured. Group A showed improved uterine contractions, better Bishop scores, reduced failure of induction, and favorable neonatal outcomes with fewer NICU admissions. The results indicate that loading oral misoprostol followed by vaginal administration is more effective and safer for labor induction than vaginal misoprostol alone.***

Keywords: Labor induction, Misoprostol, Oral misoprostol, Vaginal misoprostol, Maternal outcome, Neonatal outcome

1. Introduction

Induction of labor is a widely accepted obstetric practice aimed at initiating uterine contractions before the onset of spontaneous labor. It is performed when the beneNits of delivery outweigh the risks of continuing the pregnancy. Misoprostol, a prostaglandin E1 analogue, is frequently used due to its effectiveness, low cost, and stability at room temperature. It is administered via oral, vaginal, or rectal routes. This study explores whether a combination approach—oral loading followed by vaginal maintenance—offers superior outcomes compared to vaginal misoprostol alone.

2. Methodology

This was a comparative observational study conducted at Saraswati Institute of Medical Sciences, Hapur, Uttar Pradesh, after ethical clearance. A total of 110 pregnant women with appropriate indications for labor induction were randomly divided into two groups of 55 each. Group A received 50 mcg oral misoprostol initially followed by 25 mcg vaginal misoprostol every 3 hours. Group B received 25 mcg vaginal misoprostol every 4 hours. Inclusion criteria included nulliparity, POG >34 weeks, singleton pregnancy, and cephalic presentation. Exclusion criteria encompassed multiparity, multiple gestation, previous uterine surgery, PROM, malpresentation, and contraindications to vaginal delivery. Maternal and neonatal outcomes were compared.

3. Results and Discussion

Group A demonstrated signiNicantly better outcomes than Group B. After 4 hours, 60% of Group A had >3 uterine contractions versus 30% in Group B. Bishop scores >6 were seen in 55% (Group A) compared to 20% (Group B). No uterine ruptures or PPH were reported. Failure of induction was 0% in Group A vs 10% in Group B. FHR changes were more frequent in Group B (20%) than Group A (0%). At 12 hours, Bishop score >6 was observed in 70% of Group A versus 30% of Group B. APGAR scores >7 were recorded in 82% of Group A and 70% in Group B, with fewer NICU admissions in Group A. The combination regimen signiNicantly reduced induction-to-delivery time, improved maternal safety, and ensured better neonatal outcomes.

4. Conclusion

The study concludes that loading oral misoprostol followed by maintenance vaginal misoprostol is a more effective and safer method for inducing labor compared to only vaginal misoprostol. This combination reduces induction-to-delivery interval, improves cervical ripening, minimizes fetal distress, and ensures better neonatal outcomes.

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