Is There a Place for Outpatient Preinduction Cervical Ripening?

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KEYWORDS

• Outpatient • Preinduction • Cervical ripening • Safety

KEY POINTS

- Induction of labor continues to be one of the most commonly performed tasks in obstetrics.
- Strategies to improve patient/family satisfaction, decrease resource allocation along with costs, and assure safety will be paramount.
- Although there are many potential candidates, it seems that outpatient preinduction cervical ripening with the Foley catheter meets these criteria in a properly selected group of low-risk women.

INTRODUCTION

The rate of induction of labor more than doubled between 1990 and 2010 going from 9.6% to 23.7%. The rate of induction has stayed steady with the rate in 2014 being 23.2% for all races according to the National Vital Statistics.[1] Reasons for induction range from intrauterine growth restriction, gestational diabetes, preeclampsia, and postdates. There are many strategies for induction including pharmacologic and mechanical methods. Women who undergo induction frequently have an unfavorable cervix. Generally, an unfavorable cervix refers to a cervix that is close, posterior, firm, and not effaced. A Bishops score of less than 6 is usually considered an unfavorable cervix.[2] Labor induction, particularly in nulliparous women, can take an extended period and can be achieved through various pharmaceutical and mechanical methods. Replacing inpatient induction with outpatient strategies continues to be attractive for physicians, midwives, nurses, and hospital administrators. Decreasing length of hospital stays, cost, and workload and increasing satisfaction and number of vaginal deliveries is favorable and continues to be studied. This article reviews the different methods, safety, and efficacy of outpatient cervical ripening techniques.

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METHODS

Foley Bulb

The technique of Foley balloon for induction of labor was first described in 1860s.[3] The Foley catheter is a relatively inexpensive and effective method used to perform mechanical cervical ripening. The Foley catheter works through mechanical dilation of the cervix as it is extruded. With dilation of the cervix, endogenous prostaglandins are released that further augment cervical ripening.[4] The Foley catheter comes in multiple sizes, but the Foley catheter works by having the catheter threaded through the cervix, inflating the balloon so that it sits just past the internal os, and taping the catheter to the patient's leg on tension. Multiple studies are looking at various aspects of the Foley catheter for cervical ripening including how much to inflate the balloon, whether to put the Foley bulb on tension, and when and which pharmaceutical induction agents should be used to reduce cesarean delivery rates and time to delivery. Studies show that Foley bulbs are more effective than placebo in cervical ripening.[5,6] Sciscione and colleagues[7] in 2001 found that in 111 women randomly assigned to either 30-mL Foley catheter or 50 μg every 4 hours of vaginal misoprostol, Foley catheters are equally as likely to result in vaginal delivery as vaginal misoprostol and that time to delivery is not significantly different. A recent meta-analysis by Fox and colleagues[8] found that the Foley catheter resulted in fewer contractile abnormalities and less meconium passage.

Outpatient data

Sciscione and colleagues,[9] in a prospective trial, looked at outpatient versus inpatient Foley balloon induction of labor. These authors randomly selected 61 full-term women with vertex presentations, reactive nonstress test, appropriate amniotic fluid index, with a Bishop score less than 5. They found that Foley bulb was as effective in the outpatient setting as in the inpatient setting for preinduction cervical ripening. Furthermore, they found that maximum dose of oxytocin, time of oxytocin, epidural rate, induction time, Apgar scores, and cord pH levels were not significantly different. Importantly, the outpatient group had 9.6 fewer hours of hospital time. A pilot randomized, controlled trial from Wilkinson and colleagues[10] looked at 48 women randomly assigned to either outpatient or inpatient Foley catheter insertion. Although the study was not powered to measure significant differences in rates of cesarean delivery, infection, or delivery within 24 hours, they did find a significant reduction in the total amount of oxytocin used for the outpatient Foley catheter group. They found a 24% reduction in total oxytocin used in the outpatient group. They proposed that the ability to go home and physically relax allowed women to be more likely to go into labor naturally after Foley catheter placement. It is clear that the Foley catheter can be effectively managed by a patient in the outpatient setting.

Risks and safety profile

Overall, Foley balloons are a safe form of cervical ripening. Sciscione and colleagues[11] gauged safety by retrospectively reviewing women in the inpatient setting and applied an outpatient Foley balloon protocol. They found that adverse events including cesarean delivery for nonreassuring fetal heart tracing, abruption and intrapartum still birth were not increased in the study group. There were no cesarean deliveries for those reasons in the 1905 patients who met inclusion criteria. The 3 cesarean deliveries that occurred during the study periods were 1 for face presentation and 2 for arrest of dilation. These 3 women also went into labor naturally or had rupture of membranes during the study period, which would have excluded them from the outpatient protocol.[11]