

A comparative study of intrauterine foleys catheter with or without extra amniotic saline infusion (EASI) for cervical ripening and induction of labour

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Abstract

Materials and Methods: A two year study was conducted at Yenepoya medical College Hospital Derelakatte Mangalore. Study evaluated fifty women presenting for induction of labour with Bishops score less than five. All were 18 years of age or older with singleton pregnancy at or beyond 37 completed weeks of gestation. All women had a 16F Foleys catheter inserted through the cervix into the lower uterine segment. The bulb was inflated with a 60ml of normal saline, the Foleys was left in place for 10-12 hours unless membranes ruptured or it fell off spontaneously. 25 out of the 50 women had 200ml normal saline infused through catheter through the distal port. **Results:** All 50 showed Bishops score above 6 after a minimum of 10 hours. The average time for induction to vaginal delivery was similar in both groups (17.2 hours in Foleys and 16.8 hours in EASI), (p value <0.5). There was no statistically significant difference between the two groups in change of BISHOP score, however each individually improved the BISHOP score significantly. Caesarian rates was almost similar- 33% in Foleys and 36% in EASI (p<0.5). Neonatal outcomes (APGAR) was 9 in both groups. No incidence of chorioamnionitis or any other side effects seen in both groups. **Conclusion:** Both Foleys induction with or without EASI are safe and effective method of cervical ripening and induction with no side effects. In women with unfavourable cervix, addition of EASI does not improve the efficacy of labour induction.

Key Words: Transcervical foley, EASI, induction of labour (IOL), BISHOPS score.

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before induction of labour⁽²⁾. Techniques to ripen cervix artificially before labour induction shorten the course of labour and improve chances of a successful vaginal delivery.³ Mechanical methods of cervical ripening is Transcervical Foleys Catheter Insertion, another method is Extraamniotic saline infusion via Transcervical Foleys catheter insertion.

MATERIAL AND METHODS

First 25 patients were assigned to the Foleys with EASI and next 25 were assigned to Foleys alone, for cervical ripening and labour induction.

Inclusion Criteria

- Singleton pregnancies irrespective of parity at 37 completed weeks with bishop score<5.
- With or without history of caesarean section
- Medical conditions requiring termination

INTRODUCTION

Induction of labour is a procedure which is frequently necessary because of either maternal or fetal indications. Its success is largely dependent on state of cervix whose favourability is assessed using the Bishop score¹. Patient with a Bishop score of 4 or less require cervix ripening

Exclusion Criteria

- Patient with significant vaginal bleeding
- Severe local infection
- Who have already ruptured membranes
- C.I. for vaginal delivery
- Already in labour

Procedure

Once the patient were assigned, procedure was explained, consent taken, then they were given a dorsal lithotomy position. Under direct observation, a No. 16 Foleys Catheter was inserted through the cervical canal using an artery forceps to push it through. Once the balloon had passed beyond the internal os, it was inflated with 60 cc normal saline. The catheter was then pulled back against the internal os and was taped to medial aspect of the thigh with minimal traction. In women assigned to EASI, 250ml warm normal saline was introduced through the catheter port over 20 mts and a knot was put at the distal end to prevent the saline from escaping and then strapped to the medial aspect of thigh with minimal traction. Patients were observed for the vitals, uterine activity, and fetal heart rate hourly, expulsion of Catheter spontaneously. If the catheter had not expelled spontaneously at the end of 12hrs, it was manually removed. Cervix was evaluated and if Bishop score was favourable ARM was done. For the purpose of analysis, failed induction was defined as labour arrest before 3cm of cervical dilatation. Failure to progress was defined as secondary arrest of labour at or beyond 3cm dilatation despite adequate uterine contraction for a minimum of 2hrs. Primary outcome measure were

- Induction to delivery time (Foley insertion to delivery interval)
- Incidence of chorioamnionitis (defined as intrapartum) temp > 100.4 F without evidence of extrauterine source)
- Change in Bishop score from insertion to expulsion

Secondary outcome measures were

- Caesarian delivery rate
- Apgar at 1 and 5 mts
- NICU admissions

DATA was analysed by the chi-square test and student-T test

RESULTS

Preinduction BISHOP SCORE

Table 1: Preinduction Bishop Score

GROUP	N	MEAN	P
Foley + EASI	25	2.4	
Foley	25	2.2	$P > 0.05$

Both groups were comparable. CHANGE IN BISHOP SCORE

Table 2: The Change in Bishop Score in Individual Groups

GROUP	MEAN	P
(BS pre- BS post) FOLEYS + EASI	-4.3600	.001
FOLEYS (BS pre - BS post)	-3.6800	.001

BS pre -Pre induction BS, BS post-Post induction BS

Table 5: Change in B.S Between Groups

GROUP	N	MEAN	P
Foley + EASI	25	4.3600	
Foley	25	3.6800	$P > 0.144$

The change in each individual group was highly significant but the change compared between groups, foley with EASI and foley was not significant. There was no statistical difference noted in the mode of catheter expulsion, mode of delivery, neonatal outcome and maternal morbidity.

DISCUSSION

The results of this study showed that addition of EASI to Foleys catheter for labour induction had not resulted in shorter induction delivery intervals. It did not increase the caesarean delivery rate or rate of chorioamnionitis. These findings are in agreement with the findings of Guinn study⁽⁴⁾ and the Lin Monique study⁵. The preinduction Bishop score in our study was 2.4 in Foleys with EASI and 2.2 in Foleys group which was not statistically different from the Guinn and Linn Monique study group. The change in Bishop score was very significant in both groups but was comparable to each other. The post induction Bishop score was however more favourable in case of Foleys EASI (>8) as against Foleys only (>4 but <8). There was no case of failure of induction. The caesarean delivery rate was similar in both groups (36%). The Apgar score at 1mt⁸ and 5mts⁹ were equal in both groups. We did not administer antibiotics routinely to our patients and there was not a single case of chorioamnionitis in our study. Our data indicates that addition of EASI to transcervical Foleys catheter does not have any effect on the induction delivery interval (17.2hrs in Foleys and 16.8hrs in EASI) ($p = 0.609$), this is in agreement with the study by Guinn⁽⁴⁾ and co-workers as well as that by Linn Monique *et al*⁵ and Karjane *et al*⁶

SUMMARY AND CONCLUSION

In this interventional study done in 50 patients who were divided into 2 groups: first 25 in Foleys with EASI and second 25 in Foleys- for cervical ripening and labour induction. In women with unfavourable cervix, addition of EASI does not improve the efficacy of labour induction. Both methods are equally safe methods for cervical ripening and labour induction with significant improvement in Bishops score without increasing

caesarean delivery rate, neonatal or maternal morbidity rates.

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