Obstetric Profile of Women Undergoing Labour with Premature Rupture of Membranes at Term.

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ABSTRACT

Background: A healthy mother and a healthy baby are the central concepts of any obstetric management. Labour has to be induced in order to achieve this objective in certain cases, either for maternal or fetal indications or both, one of the common indications being premature rupture of membranes at term. If the pregnancy continues with premature rupture of membranes, a normal pregnancy turns into a high-risk one, as it is associated with significant maternal and neonatal morbidity and mortality, so an active approach induction of labour is desirable. **Objective:** To study the obstetric profile of women undergoing labour. **Methods:** 200 pregnant women with premature rupture of membranes were studied. Women with singleton pregnancy with cephalic presentation beyond 37 weeks of gestation presented with premature rupture of membranes with good fetal heart rate were included in the study. A detailed history and a thorough general examination were carried out. Uterine tenderness was looking for as a sign of chorioamnionitis. Then a speculum examination was carried. **Results:** Maximum number of cases were between 18-22 years (47%). Maximum i.e. 56% were nulliparous. The mean Bishop score in the nulliparous women was 4.41 and 4.7 for multiparous women. **Conclusion:** Majority of the patients were in the age group of 18-22 years. The mean pre induction Bishop score was 3.4 in the misoprostol group and 4.4 in the oxytocin group.

Keywords: labour, profile, women.

INTRODUCTION

A healthy mother and a healthy baby are the central concepts of any obstetric management. Labour has to be induced in order to achieve this objective in certain cases, either for maternal or fetal indications or both, one of the common indications being premature rupture of membranes at term. If the pregnancy continues with premature rupture of membranes, a normal pregnancy turns into a high-risk one, as it is associated with significant maternal and neonatal morbidity and mortality, so an active approach induction of labour is desirable.[1,2]

As an ideal inducing agent should be devoid of any serious maternal or fetal side effects either directly or indirectly attributable to the drug in question. It should be convenient for patients and staff and have a short induction delivery interval. The induction to delivery interval is the gold standard for judging the efficacy of any inducing agent.[3- 5]

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Management of labour at term in patients with premature rupture of membranes is controversial. Labour induction with intravenous oxytocin in patients with PROM, especially those with an unfavorable cervix is associated with failed induction and caesarean section. Prostaglandins were found to be effective to induce labour in patients with PROM and unfavorable cervix.[6,7]

Induction with oxytocin has been associated with increased incidence of neonatal jaundice, which could be due to the direct toxic effect of the drug on red cell membranes. Prolonged infusion may lead to maternal water intoxication, hyponatremia, coma and even death.[8]

The availability of prostaglandins has sparked a renewed wave of interest in the search of an ideal oxytocic agent. Since the early 1970s prostaglandin preparations have been used successfully for cervical ripening and induction of labour in women with PROM. Most of the studies were conducted using oral PGE_2 tablets. These were associated with significant gastrointestinal side effects. They were expensive and unstable at room temperature. They needed refrigeration.[9-11]

Misoprostol, a synthetic PGE_1 analogue, which is widely used in prophylaxis of peptic ulcers, was found to be effective in cervical ripening and labour induction when administered vaginally or orally. Misoprostol is cheap stable at room temperature and devoid of any systemic side effects. Prostaglandins have the additional advantage of reduced PPH due to uterine atony. It acts in the presence of PROM, suggesting that even alkaline pH does not affect its efficacy. So, it can be used safely and effectively in women with premature rupture of membranes at term.[12]

The present study was undertaken to study the obstetric profile of women undergoing labour.

MATERIALS AND METHODS

Study sample: 200 pregnant women with premature rupture of membranes.

Study place: Department of Obstetric, Gandhi Hospital, Secunderabad.

Women with singleton pregnancy with cephalic presentation beyond 37 weeks of gestation presented with premature rupture of membranes with good fetal heart rate were included in the study.

A detailed medical, surgical, menstrual and obstetric history and history of present pregnancy was taken. A thorough general examination was carried out which included pallor, pedal edema, weight, temperature and pulse rate. Systemic examination of cardiovascular system, respiratory system, breast, thyroid, liver and spleen were done. A thorough obstetric examination included the height of the uterus, lie, presentation and position, engagement of the head and uterine contractions and fetal heart rate monitoring. Uterine tenderness was looked for as a sign of chorioamnionitis. Then a speculum examination was carried out and the condition of the cervix and vagina noted and vaginal swab was taken as routine. Rupture of membranes was confirmed by a combination of two or more of the following tests.

1. Direct visualization of the amniotic fluid in the vagina. If no fluid was seen in the vagina, the patient was asked to cough and drainage of fluid was looked for.
2. pH > 6.5 as indicated by the litmus paper test.
3. The microscopic appearance of an arborization pattern of the amniotic fluid after the fluid was placed on a glass slide and allowed to dry.

Under all aseptic precautions, a bimanual pelvic examination was done to note the baseline Bishop's score, adequacy of the pelvis, to rule out the cephalopelvic disproportion and cord prolapsed prior to induction. Routine investigations like blood for Hb %, grouping and Rh typing, VDRL, and urine for albumin sugar and microscopy were done.

RESULTS

The present study of induction of labour was carried out on two hundred cases of pregnant women with premature rupture of membranes at term. The results were analyzed according to age, parity, Bishop score at induction, outcome of labour, induction to delivery interval, mode of delivery, intra partum complications and neonatal outcome in both groups.

Table 1: Age wise distribution of cases.

Age (years)	Number	Percentage
18-22	94	47
23-27	78	39
28-32	28	14
Total	200	100

The above table shows the age wise distribution of 200 cases of intra vaginal misoprostol and oxytocin infusion group. In both the groups the maximum number of cases were between 18-22 years (47%), followed by 23-27 years of age (39%) and then by 28-32 years (14%). The majority of the patients (47%) belonged to 18-22 years.

Table 2: Parity wise distribution of cases.

Parity	Number	Percentage
Nulliparous	112	56
Para 1	50	25
Para 2	28	14
Para 3	08	04
Para 4	02	01
Total	200	100

[Table 2] shows the parity wise distribution of cases. Maximum i.e. 56% were nulliparous. Only 2 were para 4.

Table 3: Distribution as per Bishop score.

Bishop score	Nulliparous (54)	Multigravida (46)
0-3	20	18
4-6	30	20
7-10	4	8

The mean Bishop score in the nulliparous women was 4.41 and 4.7 for multiparous women.

DISCUSSION

Premature rupture of membranes at term is a common indication for labour induction. Oxytocin and prostaglandin are the agents most commonly used for this purpose. Oxytocin is widely accepted as a safe and effective initiative of uterine contractions, but its success depends upon the cervical ripening. So, women who present with premature rupture of membranes at term and an unfavorable cervix may have a higher incidence of caesarean section if induced with oxytocin. Induction of labour with prostaglandin offers the advantage of promoting both cervical ripening and uterine contractions. They have the additional advantage of reduced primary PPH due to uterine atony and its anti thrombotic property, reducing thrombo embolic complications of the puerperium. Various studies were conducted using PGE_2 (by various routes) for induction of labour. A drawback of these prostaglandins were that they were expensive, unstable at room temperature and in some cases induced excessive uterine contractility which lead to perinatal and maternal morbidity. Misoprostol a synthetic prostaglandin E1 analogue, which is cheap, stable at room temperature, is used in the present study for cervical ripening and induction of labour in women with premature rupture of membranes at term.[12]

100 cases of women with PROM at term were induced with intra vaginal misoprostol every 3 hours and 100 cases were induced with intravenous oxytocin infusion.

In both the groups, the primigravidae and multigravidae were almost equal in number. This finding was similar to a study by Wing et al.[12] Majority of the patients belonged to 18-22 years of age in both the groups. Age did not affect the success of induction in both the groups.

The mean preinduction Bishop score was 3.4 in the misoprostol group and 4.4 in the oxytocin group. In Wing et al[12] study, the median pre induction Bishop score was 3 in the misoprostol group and 4 in the oxytocin group.

In the study, the induction delivery interval was found to be shortened in the misoprostol group than the oxytocin group. The mean induction delivery interval in nulliparous women in misoprostol group was 7.3 hours and 11.1 hours in the oxytocin group. (56% cases delivered within an hour in the misoprostol group and 41% in the oxytocin group). The mean induction delivery interval in multiparous women in misoprostol group was 3.7 hours and 7.5 hours in the oxytocin group (61% cases delivered within 3-6 hours in the misoprostol group and only 19% cases delivered within 3-6 hours). This finding was similar to the study of Thomas et al[13] and Sanchez R et al.[14] This shows that vaginal misoprostol is superior to oxytocin as an inducing agent.

In the study, 92% of misoprostol treated women delivered vaginally and 84% of oxytocin treated women delivered vaginally. This is comparable to the study of Thomas et al.[13] The caesarean section rate was lower in the misoprostol group (8%) as compared to oxytocin group (16%). The indication for caesarean section in the oxytocin group was failed induction in 4 cases (4%) whereas only one (1%) case underwent LSCS for failed induction in the misoprostol group. This finding was similar to the study of Wing et al.[12]

CONCLUSION

The majority of the patients were in the age group of 18-22 years. The mean pre induction Bishop score was 3.4 in the misoprostol group and 4.4 in the oxytocin group. The mean induction delivery interval was 7.3 hours in the nulliparous women in misoprostol group and 11.1 hours in the nulliparous women in the oxytocin group.

REFERENCES

1. Singh D, Verma M, Simn M et al. Neonatal infections following premature rupture of membranes. J Obstet Gynecol. 1990;40:232-5.
2. Vadillo-Ortego F, Lama MS et al. Collagen metabolism in premature rupture of amniotic membranes. Obstet Gynecol. 1990;75:84-88.
3. Brushell RC. Premature spontaneous rupture of membrances. Am J Obstet Gynecol. 1964;88:251-4.
4. Davidson KM. Detection of premature rupture of membranes. Clin Obstet Gynecol. 1991;34(4):715-21.
5. Allen Steven R. Premature rupture of membranes. Clin Obstet Gynecol. 1991;33(4):685-93.
6. ACOG (1999b, 2000). American College of Obstetricians and Gynecologists. Induction of labour with misoprostol. Committee opinion N 228; November 1999b.
7. Duff P, Huff R, Gibbs RS. Management of premature rupture of membranes and unfavorable cervix in term pregnancy. Obstet Gynecol. 1984;63:697-702.
8. Ghosh A, Hudson FP. Oxytocin and neonatal hyper bilirubeinaemia. Lancet. 1972;2:823.
9. Lonkey NM, Hayashi, Robert H. A proposed mechanism of premature rupture of membranes. Obstet Gynecol Surv. 1988;43(1):22-8.
10. Naeye R, Peter E. Causes and consequences at premature rupture of fetal membranes. Lancet. 1980;192-4.
11. Zeimen M, Fong SK, Benowitz NL, Darney PD. Absorption kinetics of misoprostol with oral or vaginal administration. Obstet Gynecol. 1997;90:88-92.
12. Wing DA, Paul RH. Induction of labour with misoprostol of premature rupture of membranes beyond 36 weeks of gestation. Am J Obstet Gynecol. 1998;179:94-9.
13. Thomas N, Longo SA, Rumney RJ, Asrat T. Intravaginal misorpostol in pre labour rupture of membranes. Am J Obstet Gynecol. 2000;182:5136.
14. Sanchez RL, Chen Kaunitz AM, Gadier FL. Labour induction with intravaginal misoprostol in term of PROM: A randomized study. Obstet Gynecol. 1997;89:909-912.

How to cite this article: Ambuja C, Rani BS. Obstetric Profile of Women Undergoing Labour with Premature Rupture of Membranes at Term. Ann. Int. Med. Den. Res. 2016;2(1):366-68.

Source of Support: Nil, **Conflict of Interest:** None declared.