SHORT REPORT

Maternal outcome of early intervention in women with prom at term (37 weeks or more)

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Abstract

Pre-labour rupture of membranes (PROM) is associated with complications as increase in the rate of induction of labour, foetal distress, foetal and maternal infection, and caesarean section. The objective of this case series was to determine the maternal outcome of early intervention with prostaglandin E2 in women with PROM at term in a Tertiary Care Hospital. The study period was six months from 2nd July 2014 to 1st January 2015. A total of 183 women with spontaneous PROM were selected. Detailed history was taken and clinical examination was performed. Prostaglandins 3mg tablet was kept in the posterior fornix of the vagina, which was repeated 6 hours later. The average age of the patients was 27.68±1.19 years. Chorioamniotis was observed in 2.19% (4/183) women and caesarean section in 8.2% (15/183) cases. It was concluded that Vaginal PGE2 tablet was very effective for labour induction in patients with PROM at term.

Keywords: Pre-labour rupture of membranes, prostaglandin E2, Chorioamniotis, caesarean section.

Introduction

Pre-labour rupture of membranes (PROM) is defined as rupture of membranes before the onset of labour at term (37 weeks or more of gestation). It occurs in 8-10% pregnancies. Up to 50% of patients deliver within 5 hours after rupture of membranes, and up to 95% of patients deliver within 24 hours.[1] The cause, of membrane rupture, in most cases is unknown but recent evidence suggests that infection is a major cause. It has strongly been linked with bacterial vaginosis and abnormal flora.[2]

Although with expectant management the risk of maternal and neonatal infection is higher as shown by various studies; on the other hand it has also been shown that expectant management has low rates of caesarean section; provided the spontaneous labour starts within 24 hours after rupture of membranes.[2]

Traditional method of induction is use of intravenous oxytocin, which is associated with significant high incidence of instrumental deliveries and caesarean section as shown in some studies. More recently induction with prostaglandins followed by an infusion of oxytocin if necessary has been used. It is not known as to which is the better method.[3]

Methods and Results

This case series study was conducted in the department of Gynae and obstetrics at Liaquat University Hospital Hyderabad after taking approval. The cases seen over a duration of six months were included. Inclusion criteria were all pregnant women with PROM, gestational age 37-41 weeks assessed on ultrasound, singleton pregnancy with cephalic presentation, history suggestive of spontaneous PROM confirmed by speculum examination showing pool of liquor, absence of contraction and reactive CTG. Exclusion criteria were women in active labour, previous uterine surgery (Caesarean section, myomectomy), multiple pregnancies, mal-presentation, any contraindication for vaginal delivery or expectant management such as placenta previa, and meconium staining of amniotic fluid.

The patients fulfilling the inclusion criteria were enrolled in the study and admitted in the labour room. Purpose and procedure of the study was explained to the patient and informed consent was obtained. Detailed history was taken and clinical examination was performed. PROM was confirmed by sterile speculum examination. Investigation included complete blood picture, blood group, urine detail report and random blood glucose level.

Patients received induction in the form of prostaglandins. The dose of prostaglandins was one tablet 3mg placed in posterior fornix of vagina, which was repeated 6 hours later if labour did not start caesarean section was performed if induction failed after a period of six hours.

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Table-1: Frequency of maternal outcome of early intervention with prostaglandin E2 in women with prom in term of chorioamniotis with respect to age groups.

Age Groups (Years)	Chorioamniotis		Total
	Yes	No	
≤ 25 Years	1(1.2%)	83(98.8%)	84
26 to 30 Years	3(4.2%)	68(95.8%)	71
>30 Years	0(0%)	28(100%)	28

Chi-Square = 2.39 p=0.302.

Table-2: Frequency of maternal outcome of early intervention with prostaglandin E2 in women with prom in term of caesarean section with respect to age groups.

Age Groups (Years)	Caesarean Section		Total
	Yes	No	
≤ 25 Years	6(7.1%)	78(92.9%)	84
26 to 30 Years	6(8.5%)	65(91.5%)	71
>30 Years	3(10.7%)	25(89.3%)	28

Chi-Square = 0.366 p=0.83.

All data was entered and analyzed through statistical package SPSS version 17.0. The variable such as age, gestational age and duration of rupture membranes were calculated as mean and SD while parity, LSCS, chorioamniotis was calculated as proportion, percentage. Stratification with respective age and parity was done. Post stratification chi-square test was applied. P-value of <0.05 was considered as statistically significant. A total of 183 women with spontaneous PROM confirmed by speculum examination showing pool of liquor were included in this study. The average age of the patients was 27.68±1.19 years similarly mean gestational age and duration of rupture of membranes was 37.83±0.95 weeks and 5.24±4.41 hours respectively. Out of 183 women, 84(45.9%) were primigarvida, 82(44.81%) were Multigravida and 17(9.29%) were grand Multigravida. Chorioamniotis was observed in 2.19% (4/183) women and caesarean section was 8.2% (15/183) cases. Rate of maternal complications were very low that is why significant difference was not observed between different age groups and different parity (Table-1 and 2).

Discussion

Premature rupture of membranes (PROM), which is defined as rupture of membranes before the onset of labour, complicates 5-10 % of pregnancies.[4] According to the most current studies, the rate of PROM varies from 7-15% OR 9.5% to 33.7% of all pregnancies.[5] As the interval between rupture of membranes at term and delivery increases, so does the risk of foetal, neonatal and maternal infections.[6,7] PROM may result in immediate risks such as cord prolapse, cord compression and placental abruptions; and later problems such as maternal or neonatal infection, as well as the use of interventions such as caesareans and instrumental vaginal delivery.[8] Expectant management of term PROM has been associated with maternal infections such as chorioamnionitis (inflammations of the membranes) or endometritis (generally a postpartum infection). These infections may result in neonatal infection and mortality, chronic lung disease and cerebral palsy as well as serious morbidity for the mother.[8,9]

Women appear to be more satisfied with care when there is a short time between PROM and birth.[9] It is also found that with a longer interval from admission to the onset of labour, there is an increased incidence of neonatal intensive care unit admission, caesarean rates and more frequent maternal diarrhoea and use of analgesia or anaesthesia. Induction of labour is supported by a retrospective study,[10] which reported increased perinatal mortality and intrapartum fever in women at term when there was delay of more than 72 hours between rupture of membranes and birth. Both oxytocin and PGE2 are effective in inducing labour in women with prelabour rupture of membranes at term.[10] Several studies have demonstrated the use of vaginal prostaglandin in women at term with PROM.[9]

In our study a total of 183 women with spontaneous PROM confirmed by speculum examination were induced by prostaglandin E2. Chorioamniotis was observed in 2.19% (4/183) women and caesarean section was 8.2% (15/183) cases.

Conclusion

Vaginal PGE2 tablet was found very effective for labour induction in patients with PROM at term and delivering the patients within 24 hours.

Conflicts of interest: None to declare.

References

1. Kausar M, Tahira T, Hassan S. Management prelabour rupture of the membranes at term. Professional Med J 2008; 15: 216-9.
2. Karim F, Mushtaq M. Term prelabour rupture of membrane management and outcome. Pak Armed Forces Med J 2006; 56: 232-8.
3. Tan BP, Hannah ME. Prostaglandins VS oxytocin for pre labour rupture of membranes at or near term. Cochrane Database Syst Rev 2000; 2: CD000158.
4. Duff P. Premature rupture of membranes at term. N Engl J Med 1996; 334: 1053-4.
5. Granstrom L, Ekman G, Ulmsten U. Cervical priming and labour

induction with vaginal application of 3mg PGE2 suppositories in term pregnant women with rupture of amniotic membranes and unfavourable cervix. Acta Obstet Gynecol Scand 1987; 66: 429-31.
6. Marowitz A. Management of Ruptured Membranes at term. J Midwife Womens Health 2010; 49: 539-41.
7. Gafn IA, Goeree R, Myhr TL, Hannah ME, Blackhouse G, Willan AR, et al. Induction of labour versus expectant management for prelabour rupture of the membrances at term: an economic evaluation. TERMPROM Study Group. Term prelabour rupture of the membranes. CMAJ 1997; 157: 1519-25.
8. Alexander JM, Cox SM. Clinical course of premature rupture of the membranes. Semin Perinatol 1996; 20: 369-74.
9. Lewis DF, Adair CD, Weeks JW. A randomized clinical trial of daily nonstress testing versus biophysical profile in the management of preterm premature rupture of membranes. Am J Obstet Gynecol 1999; 181: 1495.
10. Johnson JW, Daikoku NH, Niebyl JR, Johnson TR Jr, Khouzami VA, Witter FR. Premature rupture of the membranes and prolonged latency. Obstet Gynecol 1981; 57: 547-56.