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A comparative study of active vs expectant management and maternal and neonatal outcome in premature rupture of membranes at term pregnancy

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Abstract
Background: In term PROM, labour is likely to follow soon afterwards, but in preterm PROM, about 35-50% cases labour starts within 24 hours, 70% cases starts within 72 hours, about 90% delivery occurs usually within 7 days. Perinatal morbidity and mortality is increased while rupture occurs prior to term resulting in delivery of premature foetus. Approximately 80% of patients with PROM at term go into labour within 24 hours and 95% within 72 hours. The incidence of PROM, is variable, most studies report an incidence of 2-18% with an avg. Of 10%. In 70%of cases, it occurs in pregnancies at term (Williams 23rd edition.);
Aim:
1) The active versus expectant management in women with Premature rupture of membranes at term pregnancy
2) The maternal outcome in active as well as expectant management in patients with premature rupture of membrane at term pregnancy.
3) The neonatal outcome in active as well as expectant management in patients with premature rupture of membrane at term pregnancy.
Methods: 200 patients were selected after confirming foetal maturity and rupture of membrane by history and clinical examination. Foetal well-being was assessed by clinical examination and ultrasonography. Informed consent was taken from every patient included in this study.
Results: Duration of labour between both groups observed no significant variation. Selected patients with favourable Bishop's score (≥6) may be the cause of no incidence of undue delay or complications. In Group 1, 44% delivery occurred within 6 hours, 52% within ≥6-12 hours, 4% took more than 12 hours for delivery. In Group 2, 40% delivered within 6 hours, 56% in the span of ≥6-12 hours, 4% took more than 12 hours for delivery. In Expectant group (Group 2) duration of labour is significantly lower in multigravida whereas no such difference is seen in Active Management (Group 1) Group in relation to gravida.
Conclusions: In case of premature Rupture of Membranes at term –both expectant and active management leads to similar maternal and neonatal outcome. Since outcome of active and expectant management may not be very different[5], women need to have appropriate monitoring and counselling to make informed choices.

Keywords: Premature rupture, pregnancy, PROM, ultrasonography

Introduction
Rupture of membranes normally occurs spontaneously after or with onset of labour close to term delivery. (Ref. Williams23rd edition.)Premature rupture of membrane defines spontaneous rupture of fetal membrane after 37 completed weeks and before onset of labour (American college of obstetrics and gynaecologist 2013 d). Such rupture has various causes but intrauterine infection is one of the major predisposing factors. (Gomez, 1997, Mercer 2003) [8, 23]
In term PROM, labour is likely to follow soon afterwards, but in preterm PROM, about 35-50% cases labour starts within 24 hours, 70% cases starts within 72 hours, about 90% delivery occurs usually within 7 days. Perinatal morbidity and mortality is increased while rupture occurs prior to term resulting in delivery of premature foetus. Approximately 80% of patients with PROM at term go into labour within 24 hours and 95% within 72 hours. The incidence of PROM, is variable, most studies report an incidence of 2-18% with an avg.
Of 10%. In 70% of cases, it occurs in pregnancies at term (Williams 23 rd edition.).

The factors implicated in PROM include

1. Focal thinning of the amniotic membranes
2. Reduced elasticity of chorioamniotic membranes due to strain, repetitive stress of uterine contractions
3. Biochemical alteration in the supporting connective tissue leading to local weakness in chorion.
4. Nutritional and dietary deficiencies such as inadequate ascorbic acid, zinc or copper intake(Cherukuri *et al.*,, 1988, Artal *et al*., 1979, Kiiholma *et al*., 1984) [3, 1, 13, 11] (Harger *et al*., 1990) [11]
5. Smoking, Cocaine abuse
6. Sexual activity
7. Cervical incompetence and pregnancy related condition like multiple gestation, polyhydromnios and marginal insertion of the umbilical cord.
8. Past history of PROM. It is observed that there is 20% chance of recurrence in subsequent pregnancy. (Naeye *et al*., 1982) [16]
9. Infection of genital tract-Verner *et al*., observed through electron microscopy that Gr. B streptococci cause a progressive decrease in desmosome count and alteration of the basement membranes. An intense inflammatory reaction at the site of prematurely ruptured membranes noted as early as 1950; McGregor *et al*., (1987) [24] demonstrates *in vitro* exposure to bacterial protease reduce the bursting load of foetal membranes, thus micro-organisms given access to foetal membranes may be capable of causing membrane rupture, preterm labour or both.
10. Study of Seo *et al*., (1990) [19] also supports the role of genital tract infections and resultant inflammation in PROM.

Diagnosis of PROM is based on

- History of watery discharge per vagina or persistent wet ness.
- Demonstration of pooled amniotic fluid in posterior fornix or fluid leaking through cervical canal by inspection with a sterile speculum (Cusco's bivalve self-retaining speculum) and asking the patient to cough along with gentle pressure over the uterine fundus when there is no active dribbling.
- Laboratory tests showing.

a. Ferning pattern-A drop of vaginal discharge from posterior fornix is placed on a slide and dried & looked under microscope- shows a fern like pattern due to crystallization. (Combs and Kitzmiller 1993) [25].
b. pH of leaking fluid (7–7.25) more than 7, as seen by colour change of Nitrazine paper from yellow to blue.
c. False positive results may be seen if there is contamination with blood; urine or lubricant.
d. Centrifuged cells stained with 0.1%Nile blue sulphate shows orange blue coloration of cells (exfoliated fat containing cells from sebaceous gland of foetus).

- Ultrasonography shows reduction of amniotic fluid volume if there is large amount of drainage of liquor amni. However, Robson *et al*., (1990) [17] proves that ultrasound estimation of liquor volume does not correlate with presence or absence of PROM.
- Theoretically amniocentesis and injection of dye like Evans blue or Indigo carmine and its demonstration on sterile vaginal tampon after several hours give proof of rupture of membranes.

e. Cervicovaginal foetal fibronection immunoenzyme testing helps in more precise diagnosis of PROM.

Regarding risks associated with PROM

A. Maternal

1. **Preterm labour:** 2/3rd cases of PTL is associated with PPROM.
2. Abruptio placentae
3. **Intrauterine infection:** Chorioamnionitis (30%), endomyometritis, puerperal sepsis.
4. **Post-Partum Hemorrhage:** Due to increased incidence of marginal insertion of umbilical cord, (battledore placeta) and retained bits of placenta.
5. **Psychosocial sequelae:** PPROM causes dissatisfaction in both mother and relatives.

B. Foetal

1. Prematurity- Low birth weight and its sequelae.
2. Neonatal sepsis (2 -4%) - Depending on gestational age at the time of rupture of membranes and length of latent period.
3. Oligohydramnios and Oligohydromnios-tetrad in prolonged PPROM - Facial anomalies, limb positioning defects, pulmonary hypoplasia, impaired foetal growth.
4. Foetal hypoxia- due to cord prolapse, cord compression, abruption placenta associated with PROM.

Neonatal morbidity is also increased due to mechanical difficulties encountered as a result of increased incidence of malpresentation and reduced amniotic fluid volume during delivery.

Management

- Initial clinical assessment of patient with PROM determines further management. Every effort is directed initially at exclusion of overt chorioamnionitis with attention to detection of maternal tachycardia, fever, uterine tenderness, purulent vaginal discharge and foetal tachycardia.
- Evaluation of foetal gestational age from history, clinical examination and ultrasonographic assessment come next to it along with assessment of foetal well-being by clinical assessment of foetal movement, foetal heart sound and cardiotocography. Feature suggestive of preterm labour and Abruptio placentae are also to be excluded.
- Prepregnancy counselling has very limited role in prevention of PROM except smoking. Though recurrence of PROM in subsequent pregnancy is 21 – 32%. Regarding etiopathogenesis- bacterial vaginosis and role of prophylactic antibiotics has conflicting report in different studies. (Hillier *et al*., 1995; Morales *et al*.,, 1994, Hauth *et al*., 1995) [26, 27, 12].
- Expectant management, with antibiotics for five days, corticosteroids and (betamethasone 12 mg IM 12 hourly x 2 such) Tocolysis (48 hours) has greater role in preterm PROM. But for term PROM, expectant management and waiting for spontaneous onset of labour can be done with keeping vigil to foetal and maternal well-being for next 12-24 hours following onset of dribbling.

On the other hand induction of labour with oxytocin to expedite delivery with monitoring the progression of labour with foetal well-being remains another option.

For patients those who are with induction failure, prolonged PROM or associated obstetrical complications, caesarean delivery is indicated.

Regarding management options of PROM, some new

developments are worthy of mention- (for Preterm PROM)

- To seal the site of rupture in the foetal membranes with a fibrin adhesive, KURZ and HUCH cited a success rate of 66 percent.
- SALING advocated institution of vaginal irrigation with 0.5 percent polyvinyl pyrrolidone iodine solution within four hours of rupture of membranes.
- Amnioinfusion: Normal saline or Lactated Ringer's solution with or without antibiotics is infused in the amniotic cavity as a prophylaxis of umbilical cord compression and chorioamnionitis in patients with PROM.

In a nutshell, management of PROM has to be stratified according to gestation as it determines the relative risks of expected management in terms of infection versus active management with risks of prematurity (in PPROM) and failed induction of labour with subsequent operative delivery. Lastly, Delivery always has to be expedited with evidence of foetal or maternal compromise or sepsis, irrespective of gestation.

Aim of the study was to 1) The active versus expectant management in women with Premature rupture of membranes at term pregnancy 2) The maternal outcome in active as well as expectant management in patients with premature rupture of membrane at term pregnancy.3) The neonatal outcome in active as well as expectant management in patients with premature rupture of membrane at term pregnancy. And objectives of the study was to compare 1) the outcome of labour in active versus expectant management in women with premature rupture of membrane at term pregnancy so that we can plan for better management in future 2) The maternal and neonatal outcome in active versus expectant management in women with premature rupture of membrane at term pregnancy for better management of these cases in future.

Methodology

This study was carried out in the department of Obstetrics and Gynaecology of Narayan Medical College and Hospital, Jamuhar during the period from December 2019 to August 2021.

STUDY POPULATION-Pregnant women at term pregnancy with premature rupture of membrane attending antenatal clinic of outpatient dept. and admitted in indoor ward and emergency unit.

Inclusion criteria

1. Women at term pregnancy (37-40 weeks of gestation) having Premature rupture of membrane irrespective of gravidity.
2. Singleton pregnancy.
3. Pregnancy with vertex presentation.

Exclusion criteria

1. Pregnant women with premature rupture of membrane
2. Less than 37 weeks and more than 40 weeks of gestation.
3. With medical disorders.
4. With high risk factors.

- pregnancy induced hypertension
- antepartum haemorrhage

1. Scarred uterus

200 patients were selected after confirming foetal maturity and rupture of membrane by history and clinical examination. Foetal well-being was assessed by clinical examination and ultrasonography. Informed consent was taken from every patient included in this study.

200 pregnant women who were at term pregnancy with premature rupture of membrane were selected for this study.

These pregnant women were divided into two groups.

Group 1: Active management.

100 pregnant women with premature rupture of membrane were selected for active management.

Group 2: Expectant management.

100 pregnant women with premature rupture of membrane were selected for expectant management.

Now Group 1 was further divided into two subgroups.

Subgroup A: It included 50 pregnant women who has undergone induction of labour with oxytocin.

Subgroup B: It include another 50 pregnant women who has undergone induction of labour with Misoprostol.

Method of induction

In subgroup A-Induction was done by oxytocin. Oxytocin infusion was started at0.5 -2 mIU and dose was increased 1-2 mU/min every 15 -40 minute until regular, strong contractions with a frequency of 3-4 in 10 minutes were achieved.

Foetal Heart Rate was ausculted every 15 minutes.

Oxytocin was stopped in cases of nonreassuring foetal heart rate and/or manifestation of tachysystole.

In subgroup B-Induction was started with 25ug of misoprostol per vaginum. It was repeated at interval of 6 hrs depending upon the contraction of uterus and fetal heart rate. Maximum 4 doses were given.

Contraindications of Misoprost

- Scarred uterus
- Fetal distress

Investigations

Nitrazine paper test: Ph of draining fluid was determined with the help of nitrazine paper and it was between 7 to 7.5 in all cases. Colour changes from yellow to blue at PH>6.

Study of Liquor Amnii: In all cases of PROM liquor amnii was collected as high vaginal swab with strict aseptic precaution for culture sensitivity test. The sample were cultured aerobically and anaerobically for detection of any pathogenic organisms.

Monitoring labour and puerperium

Patients were monitored clinically whenever they go into labour. Condition of mother, condition of fetus and progress of labour observed meticulously with details recorded. Inj ampicillin was injected 1g as stat dose after proper skin test followed by 4 times daily, in all cases of PROM. Labour was induced in active group Elective of emergency LSCS, low forcep application done whenever necessary. Condition of baby at birth were observed and recorded. Maternal condition and complications if any after delivery up to discharge were observed

Study of new born infant

Fetal Outcome: Live birth/Stillbirth (fresh, macerated).

Alive: Apgar score at 1 minute and 5 minute, weight of foetus.

APGAR score of baby

APGAR score of baby

APGAR sign	0	1	2
Breathing effort	Not breathing	Weak cry, slow or irregular breathing	Good & strong cry, normal rate & effort of breathing
Heart rate	No heart rate	Less than 100 beats per min	At least 100 beats per minute
Muscle tone	Limp; no movement	Some flexion of arms and legs	Active motion
Reflexes	No response to airways suctioning	Grimace during suction	Grimace & pull away, cough, or sneeze during suctioning
Skin color	Whole body is completely bluish-gray or pale	Good color in body with bluish hands or feet	Good color all over body

Total score: 1 to 10
Normal score (good health): 7 to 9
Less than 7: Need medical attention.

Results

Chi-square test was used to compare the categorical data between the groups. Student t test was also used for data analysis. All statistical analyses were done at 95% confidence interval and the P-value of <0.05 was considered as statistically significant.

Statistical analysis is performed using P-value. P -valve is used to determine test of significance. In present study, 200 pregnant women were selected for the study.

Table 1: Incidence of premature rupture of membrane

Total admission	PROM
18956	2544(8.14%)

The total number of admission was 18956 in duration of two years. Out of which 2544 cases of PROM. So the incidence of PROM is 8.14%.

Table 2: Number of cases in the present study

Active management Group (Group 1)	Expectant management Group (Group 2)
100	100

In the present study, 100 pregnant women were selected for the active management group and 100 pregnant women were selected for the expectant management group.

Table 3: Distribution of cases in various age groups

	Age in Years							
	15-19		20-24		25-29		3o-34	
	No. of cases	% of cases	No. of cases	% of cases	No. of cases	% of cases	No. of cases	% of cases
Active management group	24	24%	56	56%	18	18%	2	2%
Expectant management group	21	21%	65	65%	11	11%	3	3%

Age

Group	Mean	Std. Deviation
Active management group	22.0400	2.9879
Expectant management group	21.9100	2.7747

t = 0.32, *p*>0.05 not significant.

Table 4: Distribution of case according to gravida

Gravida	Group A(active management group)		Group B(expectant management group)	
	Number	Percent	Number	Percent
1	38	38%	41	41%
2	35	35%	29	29%
3 and 4	27	27%	30	30%

Above table shows distribution of cases according to gravida. In present study 38% cases were primigravida, 35% cases were 2nd gravida and 27% cases were 3rd and 4thgravid in active management group. In expectant management group, 41% cases were primigravida, 29%were 2nd gravid and 30% were 3rd and 4th gravid.

Gravida	Active Group	Expectant Group
Primi	38	41
Multi	62	59

p> 0.05 not significant, Chi square=0.03(x2)

Table 5: Distribution of case according to socioeconomic class

Socioeconomic class	Group A(active management group)		Group B(expectant management group)	
	Number	Percent	Number	Percent
Lower	57	57%	52	52%
Upper lower	26	26%	34	34%
Lower middle	17	17%	14	14%
Upper middle	0	0	0	0
Upper	0	0	0	0

$X^2 = 0$, DF = 2, *p*>0.05 not significant

Table 6: Distribution of cases according to period of gestation

Gestational Age	Active management Group	Expectant management Group
37 weeks	15	17
38 weeks	27	30
39 weeks	49	43
40 weeks	9	10

Group	Mean	Std. Deviation
Active Group	38.44	.7429
Expectant Group	38.46	.8924

t=0.17, *p*>0.05, not significant

Table 7: Prom to labour interval

Duration (hrs.)	Active management Group	Expectant management Group
8-9hrs.	30	17
10-14hrs.	65	29
15-19hrs.	5	32
20-24hrs.	0	22

Group	Mean	Std. Deviation
Active management Group	10.8900	3.0547
Expectant management Group	12.6100	3.0941

p< 0.001 sss(significant at 0-1%), t=3.95

Table 8: Duration of Labour

Duration of Labour (hrs.)	Active management Group	Expectant management Group
8-9hrs.	29	18
10-12hrs.	52	35
13-14hrs.	17	33
15-18hrs.	2	14

Group	Mean	Std. Deviation
Active management Group	8.05	1.3
Expectant management Group	6.98	1.10

p< 0.0001 sss(significant at 0-1%), t=6.23

Table 9: Apgar score of baby at 1 minute

Type of labour	Apgar Score
Expectant management group	7.4
Active management group	7.9

Above table shows that the Apgar score of baby at 1 minute was better in active management group than expectant management group.

Table 10: Mean Apgar score of baby at 5 minute

Type of labour	Mean APGAR
Expectant management group	8
Active management group	8.5

Above table shows that the Apgar score of baby at 5 minute was better in active management group than expectant management group.

Table 11: Apgar score of baby at 1minute and at 5 minute

Group	APGAR score at 1 minute		APGAR score at 5 minute	
	Mean	SD	Mean	SD
Expectant management group	7.4	1.13	8	1.13
Active management group	7.9	1.16	8.5	1.00

P value of 1 minute Apgar score =0.001 (significant)
P value of 5 minute Apgar score = 0.006 (significant)

Above table shows that the mean APGAR score of baby at 1 minute and at 5 minute is better active management group than expectant management group.

Table 12: Birth Weight

Birth Weight	Active management Group	Expectant management Group
>3 kg	87	79
<2.5-3 Kg	13	21

X2 = 0, df =1, *p*> 0.05 not significant

Group	Mean	Std. Deviation
Active management Group	2.67	.24
Expectant management Group	2.69	.28

p> 0.05 not significant, t=0.52

Table 13: Method of induction used in active management group

Type of induction	Number of case
Oxytocin (Subgroup A)	50
Misoprostol (SubgroupB)	50

Above table shows method of induction used in this study. In 50% cases induction was done by oxytocin andin another 50% induction was done by misoprost.

Table 14: Comparision of method of induction used in active management group

Gestational Age	Oxytocin(Subgroup A)	Misoprostol(Subgroup B)
37 weeks	8	7
38 weeks	15	12
39 weeks	27	22
40 weeks	5	4

Group	Mean	Std. Deviation
Oxytocin(Subgroup A)	38.54	.64
Misoprostol(Subgroup B)	38.34	.82

t=1.35 *p*> 0.05 not significant

Table 15: Prom to labour interval

PROM to Delivery interval	Oxytocin(Subgroup A)	Misoprostol(Subgroup B)
8-9 hrs	23	7
10-14 hrs	23	42
15-19 hrs	4	1
20-24 hrs	0	0

Group	Mean	Std. Deviation
Oxytocin(Subgroup A)	10.6	2.82
Misoprostol(Subgroup B)	12.1	3.26

t=2.58, *p*< 0.01, ss(significant at 1%level)

Table 16: Duration of Labour

Duration of Labour	Oxytocin(Subgroup A)	Misoprostol(Subgroup B)
8-9 hrs	14	15
10-12hrs	25	27
13-14 hrs	10	7
15-18 hrs	1	1

Group	Mean	Std. Deviation
Oxytocin(Subgroup A)	8.18	1.33
Misoprostol(Subgroup B)	7.92	1.29

t=1.00, *p*> 0.05, not significant

Table 17: Birth Weight

Birth Weight in kg	Oxytocin(Subgroup A)	Misoprostol(Subgroup B)
>3 kg	43	44
< 2.5 -3 kg	7	6

Group	Mean	Std. Deviation
Oxytocin(Subgroup A)	2.63	.28
Misoprostol(Subgroup B)	2.71	.20

t=1.64, *p*> 0.05, not significant

Table 18: Number of cases according to mode of delivery in study group

Mode of Delivery	Active management group	Expectant management group
CS	5	12
Operative vaginal delivery(ventouse/forceps)	4	1
Vaginal	91	87

x^2=.11,df=1,*p*>.05 not significant

Table 19: Mode of delivery in active management group according to method of induction

Mode of Delivery	Oxytocin (Subgroup A)	Misoprostol(Subgroup B)
CS	3	2
Operative vaginal delivery(ventouse/forceps)	4	0
Vaginal delivery	44	47

p> 0.05, NS

Table 20: Maternal Complication

Complications	Active management group	Expectant management group
Chorioamnionitis	0	5
Postpartum pyrexia	2	5
PPH(atonic/traumatic)	3	4
Retained Placenta	2	3
Maternal distress	2	0

Table 21: Neonatal morbidity

Neonatal Outcome	Active	Expectant
Alive	95	91
Dead	5	9

x^2=1.0,df=1, *p*>.05 not significant

Discussion

Premature rupture of membrane has impact on the progress of labour as well as the mode of delivery. It also affect the maternal and neonatal outcome.

The objective of the study is to compare the outcome of labour, neonatal and maternal outcome in active versus expectant management in women with premature rupture of membrane at term pregnancy.

The study revealed several findings which may be useful in management of premature rupture of membrane.

Table 1

This table shows incidence of premature rupture of membrane at term.

Incidence: 8.14%

Total admission in 2 yrs through OPD and Emergency ward was 18956.Out of them pregnant women with premature rupture of membrane at term were 2544.Out of them 200 pregnant women were selected randomly forthe study.

According to Allahyar Jazayeri, Carl v smith (2017) PROM at term occurs in approximately 10% of term pregnancies

According to Honor society of nursing (STTI) (2008), PROM occurs in 8-10%of term pregnancies. But in my study, incidence of PROM in is 8.14% which was significant with the above study.

Table 2

In present study 100 cases were taken in Group 1 in which active management of pregnant women with premature rupture of membrane had been done and 100 cases were taken in group 2 in which expectant management of pregnant women with premature rupture of membrane had been done. (Table -2)

Table 3

In this study considering the age factor, it was found that the majority of women in both group [Group 1(56%) and group 2(65%)] were in age groups of 20-24 years. The youngest patient was 15 years old and eldest patient was 34 years old. Mean age in Group 1 and Group 2 was 22.04years and 21.91 years respectively. Standard deviation of group1 and 2 was 2.98 and 2.774 respectively. No statistical difference was observed (P > 0.05) in this study (Table 3).

Malhotra, Prabha, *et al*., (1962) [28] recorded the minimum age for primigravida as 15 years and maximum age as 32 years which was similar with the present study.

In Suchika Gupta *et al*., study (2012) mean age in Group 1 and Group 2 was 21.87 ± 2.365 years and 22.04 ± 2.194 years respectively. No statistical difference was observed (P = 0.5373) in her study, her study was similar to present study.

Table 4

In present study 40% cases were primigravida, 30% cases were 2nd gravida and 30% cases were 3rd and 4th gravid.

In the study of Kodanky & Telang and Someznek- Sikora *et al*., they had also greater number of primigravida in their study.

Malhotraprabha *et al*., (1962) [28] and Suchikagupta *et al*., (2012) had included only primigravida in there study which was not similar to present study.

Among them, 40%were primi and 60% were multigravida. (*p*>.05) which is not significant that is no statistical difference was observed in this study.

Table 5

In present study considering socioeconomic condition, it was found that maximum number of cases (60%) come under low socioeconomic class, 30% cases of upper lower socioeconomic class and 10% cases were found in lower middle socioeconomic class. Patients of upper middle and upper socioeconomic class were not found. Probably because this institution is a government medical college (Tertiary Sector).

According to J. Pediatr. (Rio. J), Arnildo A. Hackenhaar, Elaine P. Albernaz, Tania M.V da F onseca (1998), premature rupture of membrane is prevalence in low socioeconomic condition.

Table 6

This table shows distribution of pregnant women taken for the study on the basis of gestational age. I had taken pregnant women of gestational age 37-40 weeks for my study.

Maximum no. Of pregnant women in both the active management group and in expectant management group were of gestational age of 39 weeks.

Mean gestational age of group 1 and 2 were 38.44 and 38.46 weeks respectively. Standard deviation of both the groups were 0.74 and0 .89 respectively.t=0.17 and *p*>.05 which is not significant that is no statistical difference was observed in this study.

Table 7

This table shows duration of labour in active management group and expectant management group. Maximum no. Of pregnant women in both the groups had duration of labour of 8-9 hrs. Mean standard deviation of active management group and expectant management group were 8.05 and 6.98 respectively and standard deviation were 1.31 and 1.1 respectively.

T=6.23 and *p*<.001 that is highly significant at 0-1%level.

This shows duration of labour significantly varies between the two groups.

In active management group duration of labour was reduced as compared to expectant management group which future affect neonatal and maternal outcome.

According to, Mary Angela, *et al*., Fabiana da GRACA krupa, Jose Guilherme Cecatti, Fernanda Garanhani de Castro, Helaine Maria Besteti Pires Milanez, Both groups had similar general characteristics but the induction group had a significantly shorter latency period (9.4 vs 15.8 hrs), shorter time interval from recruitment to delivery (18.9 vs 27.5 hrs), a shorter duration of labour (8hrs vs 12 hrs).
In the immediate induction group all goes in labour within 6 - 12hrs; on the other hand in expectant group had to wait for 12 hours.
It shows active management reduces the duration of labour

Table 8
This table shows PROM- delivery interval in active management group and in expectant management group. Most of the pregnant women had PROM- delivery interval of 10-14 hrs. In both the groups. Mean deviation of active management group and expectant management group were 10.89 and 12.61 respectively. t=3.95 and p<.001 i.e highly significant at 0-1%.
This table shows statistically significant difference between the two groups. PROM-delivery interval decreases significantly in active management group. According to,

Krupa Shah and Haresh Joshi *et al*., (2005)
Suggest PROM-delivery interval. was 22 hrs in expectant management while in early induction it was 13 hrs.The benefit of active management in cases with PROM at term has been shown to reduce latency following development of PROM.This is beneficial in terms of reduction of maternal and neonatal infection icantly in active management group as compared to expectant management group in my study.

Table 9
This table shows neonatal outcome in terms of apgor score in active management group and expectant management group. Maximum no. Of neonates have apgor score**7** in both the groups. Mean deviation of active management group and expectant management group were 7.51 and 8.31 respectively. Standard deviation of both the groups were 1.36 and 1.70respectively.t
t=3.05and p<.01 that is significant at 1%level.
This table shows significant differences in apgor score in both the groups. Active management group have better neonatal outcome as compared to expectant management group. According to, Chaudhuri snehamay *et al*., (2006). In women with PROM at term, immediate induction of labor with PGE2 gel followed by oxytocin result in low rates of neonatal infection in active group and better apgor score. As compared to expectant management.

Table 10
This table shows birth weight of the neonate in active management group and in expectant management group. Most of the neonate in both the groups were >2.5kg.Mean deviation on both the groups were 2.67 and 2.69 respectively. Standard deviation in both the groups were 0.24 and 0.28 respectively.
t=0.52 and p<.05 that is there is no statistical difference between the two groups in terms of neonatal weight.

Table 11
In this table Group 1 pregnant women were further divided into two subgroups. Subgroup 1 included 50 pregnant women who had undergone induction by oxytocin. Subgroup 2 included 50 pregnant women who had undergone induction by misoprost.

Table 12
This table shows comparision of the two subgroups on the basis of gestational age. In both the subgroup A and B maximum no. Of pregnant women were of gestational age of 39 weeks. Mean standard deviation of both the subgroups were 38.54 and 38.34 respectively and standard deviation of both the subgroups were 0.64 and 0.82 respectively.t=1.35 p>0.05 that is there is no statistical significance between the two subgroups in terms of gestational age.

Table 13
This table shows comparison between the duration of labour in between the two subgroups.
In both the subgroups, maximum no. Of pregnant women had duration of labour between 8-9 hrs. Mean of both the subgroups were 8.18 and 7.92 respectively. And standard deviation of both the subgroups were 1.33 and 1.29 respectively, t=1.00 and p<0.05 that is there is no statistical significance in both the groups in terms of duration of labour.

According to Zeteroglu S *et al*.,, J Matern Fetal NEONATAL MED. (2006) [29]
48 WOMEN were assigned to intravaginal misoprost and 49 to oxytocin. MEAN INTERVAL from induction to delivery interval was 10.61hrs in misoprost group and 11.57 hrs in oxytocin group showing similar induction of labour to delivery interval in misoprost group as compared to oxytocin group.

Table 14
This table shows PROM-Delivery interval in both the subgroups. Maximum no. Of pregnant women had PROM-Delivery interval between 10-14 hrs. Mean in both the subgroups were 10.6 and 12.18 respectively and standard deviation in both the subgroups were 2.82 and 3.26 respectively.t=2.58 and p<0.01 that is significant at 1% level.

According to Pouralil L *et al*.,, J. Obstet Gynaecol 2017
OUT of 270 patients with premature rupture of membrane who undergo induction. First group undergone induction by oxytocin according to low dose standard protocol and second group received 25 ug per vaginal misoprost every 4 hrs. Time interval from induction to beginning of active phase of labour was better in misoprost groups.
Second stage was significantly shorter in misoprost group with slight higher maternal side effects (p<.oo1) but 5 minutes apgor score was significantly better in misoprost group

According to Ayman a S Habana, Osama el Kilani. Nabih el, khouly m tayel *et al*., (2015)
Time-interval from induction to delivery interval were significantly shorter in misoprost group than oxytocin group (6.59and 9.30) and p<.001 i.e significant difference in between two groups. Induction to delivery interval decreases significantly in misoprost group.

Table 15
=This table shows neonatal outcome in terms of apgor score in both the sug groups. Maximum no. Of neonates in both the subgroups were in apgor score 7.Mean of both the subgroup were 7.30 and 8.72 respectively and standard deviation in both the subgroups were 1.54 and 1.14 respectively.t=5.24 and p<0.001 that is highly significant at 0-1%level between the two subgroups.

According to international journal of obstetrics and gynaecology (2005)

Active management with oral misoprost resulted in more women going into labour and delivering within 24 hrs of premature rupture of membrane with no increase in maternal or neonatal complications as compared to oxytocin. Immediate labour induction with misoprost in cases of term PROM shortens the latency period, the total time between recruitment to delivery and the time of maternal hospitalisation with better apgor score of the neonate of misoprost group.

Table 16

This table shows birth weight of the neonate s in both the subgroups. Maximum no. Of neonates in both the subgroups were >2.5kg weight. Mean of both the subgroups were 2.63 and 2.71 respectively and standard deviation in both the subgroups were 0.28 and 0.20 respectively.t=1.64 and p>0.05 that is statistically not significance.

This shows no statistical differences in the birth weight of the neonate in both the subgroups.

Table 17

This table shows mode of delivery in active management group and in expectant management group. No. of pregnant women who had undergone vaginal delivery was 90 in active management group and 82 in expectant management group. No. of caesarean section were 10 in active management group and 17 in expectant management group.x2=0.11,df=1,and p>0.05 i.e not significant.

That is there is no statistically significant difference in terms of mode of delivery in both the groups in my study. But According to American Journal of Obstetrics and Gynaecology (2004) active management in patients of PROM at term pregnancy was associated with significantly lower group caesarean section rate.

In this study the 2 groups are active group and expectant group. Active group have lower rate of caesarean rate than expectant group (4%vs16.7%).Findings are similar for both primigravida and multigravida. Active management group are not associated with higher rate of other major birth outcome.

Chaudhuri snehamay *et al*., (2006)

Immediate induction of labor results in significantly lower rate of cesarean section and of operative vaginal delivery in primi gravid.

Table 18

This table shows mode of delivery in subgroup 1 and 2. In subgroup 1 out of 50 pregnant women no. Of pregnant women who had undergone vaginal delivery were 44 and those in subgroup B were 46.No. of caesarean section in subgroup 1 were 6 and those in subgroup B were 4. p>0.05i.e not significant. Both the subgroups A and B were not statistically significant in terms of mode of delivery.

According to Zeteroglu S *et al*.,, J Matern Fetal NEONATAL MED. (2006)

48 Women were assigned to intravaginal misoprost and 49 to oxytocin,rates of vaginal delivery were 83.3%and 87.7% and caesarean section rate were16.7% and 12.3%respectively in misoprost and oxytocin group and p<0.05 i.e not significant.

This study outcome is related to my study.

Table 19

This table shows maternal complications in active management group as compared to expectant management group.

Chorioamnionitis were more in expectant management group as compared vto active management group.

No. Of feto maternal complications, postpartum haemmorage and retained placenta were more in expectant management group as compared to active management group.

According to Cochrane library 2017 (PHILIPPA Middleton, Emily Shepherd, Vicki Flenady, Rosemary D Mcbrain)it is better to induce labour rather than waiting for expectant management for women with term PROM for better maternal, fetal,and neonatal outcome.23 trails involving 8615 women and their babies are included in this group.

10 trails assessed intravenous oxytocin, 13 trails assessed prostaglandins. (6 trails in form of vaginal PGE2 and 7 with vaginal misoprost.

Primary outcome-Women who had planned birth by induction were at reduced risk of maternal infectious morbidity (chorioamnionitis and endometritis) than women who had expectant management following term PROM and their neonatal are less likely to have early onset neonatal sepsis.

Secondary outcome-women who had planned birth by induction were at reduced risk of postpartum septicaemia and their neonates are less likely to receive antibiotics. These women had a shorter time from rupture of membrane to birth and their neonates are less likely to be admitted to neonatal special or intensive care unit.

Table 20

This table shows neonatal outcome in active management group and in expectant management group. Out of 100 neonates in active management group, 94 neonates were alive and 6 were dead due to fetal distress.

Out of 100 neonates in expectant management group, 91 neonates were alive and 9 neonates were dead due to neonatal infection and birth asphyxia.

X2=1, DF=1 and p>0.05 that is not significant. That is there is no statistical significance between the two groups in terms of neonatal outcome.

Conclusion

In case of premature Rupture of Membranes at term –both expectant and active management leads to similar maternal and neonatal outcome.

Since outcome of active and expectant management may not be very different[5], women need to have appropriate monitoring and counselling to make informed choices.

A. Outcome of labour in Preterm Premature Rupture of membranes at term pregnancy in both active as well as expectant management.
B. Maternal outcome in reference to chorioamnionitis, duration of labour, fever before and during labour and puerperal pyrexia in both groups.
C. Neonatal outcome –Number of admission in NICU AND APGOR SCORE.

These primary out comes are based on clinical effectiveness (mode delivery, induction- delivery interval, admission time-delivery interval) and safety (uterine hyperstimulation, caesarean delivery, maternal and neonatal outcome.)

Conflict of Interest

Not available

Financial Support
Not available

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