



West Middlesex University Hospital

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Date: 07 Jun 2017

Sources Searched: Medline, Embase, DynaMed Plus.

Rate of Infection in Prolonged PROM at Term

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Evidence Summary:

- When there is PROM the risk of serious infection is increased (1% versus 0.5% for women with intact membranes).
- The risk of chorioamnionitis with term PROM has been reported to be less than 10% and to increase to up to 40% for latency periods exceeding 24 hours ([Seaward, P.G et al, 1997](#))
- Multiple vaginal examinations is an important risk factor for developing infection, the risk of chorioamnionitis is 2% with fewer than 3 vaginal examinations, this increases to 13% if there are 7-8 vaginal examinations ([NICE 2014](#)).

1. International Multicentre Term Prelabor Rupture of Membranes Study: evaluation of predictors of clinical chorioamnionitis and postpartum fever in patients with prelabor rupture of membranes at term.

Author(s): Seaward, P G; Hannah, M E; Myhr, T L; Farine, D; Ohlsson, A; Wang, E E; Haque, K; Weston, J A; Hewson, S A; Ohel, G; Hodnett, E D

Source: American journal of obstetrics and gynecology; Nov 1997; vol. 177 (no. 5); p. 1024-1029

Publication Date: Nov 1997

Publication Type(s): Research Support, Non-u.s. Gov't Randomized Controlled Trial Clinical Trial Multicenter Study Journal Article

Abstract:OBJECTIVES Our purpose was to determine significant predictors for the development of clinical chorioamnionitis and postpartum fever in patients with prelabor rupture of membranes at term.STUDY DESIGN Logistic regression analysis with odds ratios and 95% confidence intervals was used to determine the significant predictors of clinical chorioamnionitis and postpartum fever in women with prelabor rupture of membranes at term enrolled in this study. The study recently compared in a randomized controlled trial four strategies of management: induction with oxytocin, induction with prostaglandin, expectant management, and, if failed, induction with oxytocin or prostaglandin.RESULTS The following variables were significantly associated with clinical chorioamnionitis: (1) number of digital vaginal examinations: > 8, 7 to 8, 5 to 6, 3 to 4 (vs 0 to 2) (odds ratio 5.07, 3.80, 2.62, 2.06); (2) duration of active labor: > or = 12, 9 to or = 48, 24 to or = 12, 9 to < 12, 6 to < 9, 2 to < 6 hours (vs < 3 hours) (odds ratio 4.86, 3.53, 3.46, 3.04), (3) cesarean section, operative vaginal delivery (odds ratio 3.97, 1.86), (4) group B streptococcal colonization (odds ratio 1.88), and (5) maternal antibiotics before delivery (odds ratio 1.94).CONCLUSIONS Increasing numbers of digital vaginal examinations, longer duration of active labor, and meconium staining of the amniotic fluid were the most important risk factors for the development of clinical chorioamnionitis in women with prelabor rupture of membranes at term. The most important risk factors for the development of postpartum fever were clinical chorioamnionitis, increasing duration of active labor, and cesarean section delivery.

Database: Medline

2. International multicenter term PROM study: evaluation of predictors of neonatal infection in infants born to patients with premature rupture of membranes at term. Premature Rupture of the Membranes.

Author(s): Seaward, P G; Hannah, M E; Myhr, T L; Farine, D; Ohlsson, A; Wang, E E; Hodnett, E; Haque, K; Weston, J A; Ohel, G

Source: American journal of obstetrics and gynecology; Sep 1998; vol. 179 (no. 3); p. 635-639

Publication Date: Sep 1998

Publication Type(s): Research Support, Non-u.s. Gov't Randomized Controlled Trial Clinical Trial Multicenter Study Journal Article

Abstract:OBJECTIVE Our objective was to determine significant predictors for the development of neonatal infection in infants born to patients with premature rupture of membranes at term.STUDY DESIGNMultivariate analysis was used to determine the significant predictors of neonatal infection in infants born to women with premature rupture of the membranes who were enrolled in the Term PROM Study. In a randomized, controlled trial, the Term PROM Study recently compared induction of labor with expectant management for premature rupture of membranes at term.RESULTSThe following variables were identified as independent predictors of neonatal infection: clinical chorioamnionitis (odds ratio 5.89, P or = 48 hours from membrane rupture to active labor (vs < 12 hours, odds ratio 2.25, P = .01), and maternal antibiotics before delivery (odds ratio 1.63, P = .05).CONCLUSIONS Among infants born to patients with premature rupture of membranes at term,

clinical chorioamnionitis and maternal colonization with group B streptococci are the most important predictors of subsequent neonatal infection.

Database: Medline

3. Length of rupture of membranes in the setting of premature rupture of membranes at term and infectious maternal morbidity.

Author(s): Tran, Susan H; Cheng, Yvonne W; Kaimal, Anjali J; Caughey, Aaron B

Source: American journal of obstetrics and gynecology; Jun 2008; vol. 198 (no. 6); p. 700

Publication Date: Jun 2008

Publication Type(s): Journal Article

Abstract:OBJECTIVE This study was undertaken to define the time thresholds of increased risk for infectious maternal morbidities with relationship to length of ruptured membranes at term.STUDY DESIGNWe designed a retrospective cohort study of all women with premature rupture of membranes beyond 37 weeks' gestation at a single institution. Dichotomized time thresholds of length of ruptured membranes before delivery were examined in 2-hour increments using bivariate and multivariable analyses to assess the rates of chorioamnionitis and endomyometritis.RESULTSAmong the 3841 women meeting inclusion criteria, increased rates of chorioamnionitis and endomyometritis were noted at time thresholds of 12 hours (adjusted odds ratio 2.3 [95% confidence interval, 1.2-4.4]) and 16 hours (adjusted odds ratio 2.5 [95% confidence interval, 1.1-5.6]), respectively.CONCLUSION We found that when length of time of ruptured membranes before delivery is examined via dichotomized time thresholds, the risks of chorioamnionitis and endomyometritis are significantly increased at 12 hours and 16 hours, respectively. These time thresholds derived from dichotomized time analyses should be considered during risk-based counseling and labor management in the setting of term premature rupture of membranes.

Database: Medline

4. Time between membrane rupture and delivery and septicemia in term neonates.

Author(s): Herbst, Andreas; Källén, Karin

Source: Obstetrics and gynecology; Sep 2007; vol. 110 (no. 3); p. 612-618

Publication Date: Sep 2007

Publication Type(s): Research Support, Non-u.s. Gov't Journal Article

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Obstetrics and Gynecology

Available in full text at [Obstetrics and Gynecology](#) - from Ovid

Abstract:OBJECTIVETo investigate how the interval between membrane rupture and delivery affects the risk of neonatal sepsis and whether duration of labor influences the risk.METHODSA registry study included 113,568 singleton infants born at term after a trial of labor (elective cesarean deliveries excluded). The incidence of a diagnosis of sepsis during the neonatal period was correlated to the interval between membrane rupture and delivery. Multiple logistic regression analysis was done with adjustments for maternal age, parity, infant gender, gestational age, birth weight, and duration of labor. Receiver operating characteristics curves were created to estimate the optimal cutoff of membrane rupture time associated with an increased risk of neonatal septicemia.RESULTSThe rate of neonatal sepsis was 0.3% at a membrane rupture to delivery interval below 6 hours, 0.5% at 6-18 hours, 0.8% at 18-24 hours, and 1.1% after 24 hours. The risk of neonatal sepsis increased independently and nearly linearly with duration of membrane rupture up

to 36 hours, with an odds ratio of 1.29 for each 6-hour increase in membrane rupture duration. The risk also increased with birth weight, gestational age, primiparity, and male infant gender. Duration of labor was not an independent risk factor for neonatal sepsis. Receiver operating characteristics curve analysis revealed an area under the curve of 0.66, but a superior cutoff time limit for the risk of sepsis was not found. **CONCLUSION** The risk of neonatal sepsis increases with duration of membrane rupture in a linear fashion during the first 36 hours, independently of labor duration. **LEVEL OF EVIDENCE** II.

Database: Medline

5. Comparison of 12- and 72-hour expectant management of premature rupture of membranes in term pregnancies

Author(s): Shalev E.; Peleg D.; Eliyahu S.; Nahum Z.

Source: Obstetrics and Gynecology; 1995; vol. 85 (no. 5); p. 766-768

Publication Date: 1995

Publication Type(s): Article

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Obstetrics and Gynecology

Available in full text at [Obstetrics and Gynecology](#) - from Ovid

Abstract: Objective: To compare 12-hour and 72-hour expectant management of premature rupture of membranes (FROM) in singleton term pregnancies. Methods: In a prospective, nonrandomized study, 566 low-risk women with singleton term pregnancies presenting with FROM were assigned to either 12-hour or 72-hour at the end of the assigned period were induced with oxytocin. The pregnancy outcome of both methods was compared with regard to infectious complications and method of delivery. Results: There was no statistical difference in the rate of chorioamnionitis between the 12-hour and 72-hour expectant management groups (11.7 versus 12.7%; relative risk [RR] 0.9, 95% confidence interval [CI] 0.6-1.5; $P = .83$). Cesareans were performed to a similar degree in both groups (4.7 versus 6.7%; RR 0.7, 95% CI 0.3-1.4; $P = .39$). Fifty-five percent of the 12-hour group underwent oxytocin induction, compared with 17.5% of those in the 72-hour group (RR 5.8, 95% CI 3.9-8.5; $P < .001$). Women undergoing induction after 72-hour expectant management had an increased risk of cesarean delivery compared with those after a 12-hour wait (RR 5.9, 95% CI 2.3-15.1; $P < .001$). Overall, women in the 12-hour group had shorter admission-to-discharge times than the 72-hour group (5 versus 6 days, 95% CI of the difference 0.6-1.3; $P < .01$). Conclusion: Regimens of 12-hour and 72-hour expectant management of FROM are comparable regarding infectious complications and pregnancy outcome. However, the longer wait prolongs the interval to delivery and increases hospitalization costs.

Database: EMBASE

6. Clinical variables associated with neonatal infection after prelabor rupture of membranes at term: A retrospective review

Author(s): Zamora B.B.; Kalalo R.E.

Source: Journal of Paediatrics and Child Health; Mar 2012; vol. 48 ; p. 100

Publication Date: Mar 2012

Publication Type(s): Conference Abstract

Available in full text at [Journal of Paediatrics and Child Health](#) - from John Wiley and Sons

Abstract:Background: Premature rupture of the membranes (PROM) at term poses a clinical problem. It results in an increase in pregnancy complications in both term and preterm gestations. The risk of infection after premature rupture of the membranes is of concern for both mother and fetus or neonate. This study aims to determine the clinical variables associated with neonatal infection in prelabor rupture of membranes at term. Method: This is a retrospective cohort study of all patients with prelabor rupture of membranes at term within the 5-year study period. The SPSS software package was used for statistical analysis. Categorical data were tested using chi2 or Fisher's exact test. Continuous data were using a 2-tailed Student's t-test. Results: The result showed hours from PROM to delivery was the only variable which predicted infection, with a P-value of 0.045, indicating that as time from PROM to delivery increased, the higher the likelihood of infection. Conclusions: The result showed hours from PROM to delivery was the only variable which predicted infection, with a P-value of 0.045, indicating that as time from PROM to delivery increased, the higher the likelihood of infection.

Database: EMBASE

7. Premature rupture of membranes at term in low risk women: How long should we wait in the "latent phase"?

Author(s): Pintucci A.; Meregalli V.; Colombo P.; Fiorilli A.

Source: Journal of Perinatal Medicine; Mar 2014; vol. 42 (no. 2); p. 189-196

Publication Date: Mar 2014

Publication Type(s): Article

Abstract:Aim: How long the waiting time may be for the onset of spontaneous labor after prelabor rupture of fetal membranes at term (tPROM) remains controversial. Methods: The study is an observational cohort study of 6032 women. All obstetric patients with no obstetric risk factors, other than tPROM, were included. The analysis focused on the onset of labor (spontaneous vs. induction), maternal morbidity [cesarean section (CS) and chorioamnionitis] and neonatal morbidity (suspected infection) related to a policy of waiting for the onset of spontaneous labor within 48 h of tPROM. Results: tPROM was experienced by 1439 women. A careful clinical management shows a very low rate of clinical chorioamnionitis (2.3%) and neonatal infection rate (2.8%), even after 24 h from tPROM. The overall incidence of CS was 4.5%. Furthermore, a policy of waiting for the onset of spontaneous labor within 48 h of tPROM is associated with a low rate of CS, less than induced labor (OR = 1.76; 95% confidence interval 1.03-3.02; P < 0.004). Conclusions: Fetal and/or maternal morbidity in tPROM women may not increase if there is a strict analysis of maternal and or fetal risk factors added to a careful clinical management. Moreover, it may be useful to wait for spontaneous labor in order to enhance the patient's chance of vaginal delivery. © 2014 Walter de Gruyter GmbH, Berlin/Boston.

Database: EMBASE

8. Planned early birth versus expectant management (waiting) for prelabour rupture of membranes at term (37 weeks or more).

Author(s): Middleton, Philippa; Shepherd, Emily; Flenady, Vicki; McBain, Rosemary D; Crowther, Caroline A

Source: The Cochrane database of systematic reviews; Jan 2017; vol. 1 ; p. CD005302

Publication Date: Jan 2017

Publication Type(s): Meta-analysis Journal Article Review

Available in full text at [Cochrane Library, The](#) - from John Wiley and Sons

Abstract:BACKGROUND Prelabour rupture of membranes (PROM) at term is managed expectantly or by planned early birth. It is not clear if waiting for birth to occur spontaneously is better than intervening, e.g. by inducing labour. OBJECTIVE The objective of this review is to assess the effects of planned early birth (immediate intervention or intervention within 24 hours) when compared with expectant management (no planned intervention within 24 hours) for women with term PROM on maternal, fetal and neonatal outcomes. SEARCH METHODS We searched Cochrane Pregnancy and Childbirth's Trials Register (9 September 2016) and reference lists of retrieved studies. SELECTION CRITERIA Randomised or quasi-randomised controlled trials of planned early birth compared with expectant management (either in hospital or at home) in women with PROM at 37 weeks' gestation or later. DATA COLLECTION AND ANALYSIS Two review authors independently assessed trials for inclusion, extracted the data, and assessed risk of bias of the included studies. Data were checked for accuracy. MAIN RESULTS Twenty-three trials involving 8615 women and their babies were included in the update of this review. Ten trials assessed intravenous oxytocin; 12 trials assessed prostaglandins (six trials in the form of vaginal prostaglandin E2 and six as oral, sublingual or vaginal misoprostol); and one trial each assessed Caulophyllum and acupuncture. Overall, three trials were judged to be at low risk of bias, while the other 20 were at unclear or high risk of bias. Primary outcomes: women who had planned early birth were at a reduced risk of maternal infectious morbidity (chorioamnionitis and/or endometritis) than women who had expectant management following term prelabour rupture of membranes (average risk ratio (RR) 0.49; 95% confidence interval (CI) 0.33 to 0.72; eight trials, 6864 women; $\text{Tau}^2 = 0.19$; $I^2 = 72\%$; low-quality evidence), and their neonates were less likely to have definite or probable early-onset neonatal sepsis (RR 0.73; 95% CI 0.58 to 0.92; 16 trials, 7314 infants; low-quality evidence). No clear differences between the planned early birth and expectant management groups were seen for the risk of caesarean section (average RR 0.84; 95% CI 0.69 to 1.04; 23 trials, 8576 women; $\text{Tau}^2 = 0.10$; $I^2 = 55\%$; low-quality evidence); serious maternal morbidity or mortality (no events; three trials; 425 women; very low-quality evidence); definite early-onset neonatal sepsis (RR 0.57; 95% CI 0.24 to 1.33; six trials, 1303 infants; very low-quality evidence); or perinatal mortality (RR 0.47; 95% CI 0.13 to 1.66; eight trials, 6392 infants; moderate-quality evidence). SECONDARY OUTCOMES women who had a planned early birth were at a reduced risk of chorioamnionitis (average RR 0.55; 95% CI 0.37 to 0.82; eight trials, 6874 women; $\text{Tau}^2 = 0.19$; $I^2 = 73\%$), and postpartum septicaemia (RR 0.26; 95% CI 0.07 to 0.96; three trials, 263 women), and their neonates were less likely to receive antibiotics (average RR 0.61; 95% CI 0.44 to 0.84; 10 trials, 6427 infants; $\text{Tau}^2 = 0.06$; $I^2 = 32\%$). Women in the planned early birth group were more likely to have their labour induced (average RR 3.41; 95% CI 2.87 to 4.06; 12 trials, 6945 women; $\text{Tau}^2 = 0.05$; $I^2 = 71\%$), had a shorter time from rupture of membranes to birth (mean difference (MD) -10.10 hours; 95% CI -12.15 to -8.06; nine trials, 1484 women; $\text{Tau}^2 = 5.81$; $I^2 = 60\%$), and their neonates had lower birthweights (MD -79.25 g; 95% CI -124.96 to -33.55; five trials, 1043 infants). Women who had a planned early birth had a shorter length of hospitalisation (MD -0.79 days; 95% CI -1.20 to -0.38; two trials, 748 women; $\text{Tau}^2 = 0.05$; $I^2 = 59\%$), and their neonates were less likely to be admitted to the neonatal special or intensive care unit (RR 0.75; 95% CI 0.66 to 0.85; eight trials, 6179 infants), and had a shorter duration of hospital (-11.00 hours; 95% CI -21.96 to -0.04; one trial, 182 infants) or special or intensive care unit stay (RR 0.72; 95% CI 0.61 to 0.85; four

trials, 5691 infants). Women in the planned early birth group had more positive experiences compared with women in the expectant management group. No clear differences between groups were observed for endometritis; postpartum pyrexia; postpartum antibiotic usage; caesarean for fetal distress; operative vaginal birth; uterine rupture; epidural analgesia; postpartum haemorrhage; adverse effects; cord prolapse; stillbirth; neonatal mortality; pneumonia; Apgar score less than seven at five minutes; use of mechanical ventilation; or abnormality on cerebral ultrasound (no events). None of the trials reported on breastfeeding; postnatal depression; gestational age at birth; meningitis; respiratory distress syndrome; necrotising enterocolitis; neonatal encephalopathy; or disability at childhood follow-up. In subgroup analyses, there were no clear patterns of differential effects for method of induction, parity, use of maternal antibiotic prophylaxis, or digital vaginal examination. Results of the sensitivity analyses based on trial quality were consistent with those of the main analysis, except for definite or probable early-onset neonatal sepsis where no clear difference was observed.

AUTHORS' CONCLUSIONS There is low quality evidence to suggest that planned early birth (with induction methods such as oxytocin or prostaglandins) reduces the risk of maternal infectious morbidity compared with expectant management for PROM at 37 weeks' gestation or later, without an apparent increased risk of caesarean section. Evidence was mainly downgraded due to the majority of studies contributing data having some serious design limitations, and for most outcomes estimates were imprecise. Although the 23 included trials in this review involved a large number of women and babies, the quality of the trials and evidence was not high overall, and there was limited reporting for a number of important outcomes. Thus further evidence assessing the benefits or harms of planned early birth compared with expectant management, considering maternal, fetal, neonatal and longer-term childhood outcomes, and the use of health services, would be valuable. Any future trials should be adequately designed and powered to evaluate the effects on short- and long-term outcomes. Standardisation of outcomes and their definitions, including for the assessment of maternal and neonatal infection, would be beneficial.

Database: Medline

9. Premature rupture of the membranes at term: time to reevaluate the management.

Author(s): Sadeh-Mestechkin, Dana; Samara, Nivin; Wiser, Amir; Markovitch, Ofer; Shechter-Maor, Gil; Biron-Shental, Tal

Source: Archives of gynecology and obstetrics; Nov 2016; vol. 294 (no. 6); p. 1203-1207

Publication Date: Nov 2016

Publication Type(s): Journal Article

Available in full text at [Archives of Gynecology and Obstetrics](#) - from Springer Link Journals

Abstract: **PURPOSE** To compare maternal and neonatal outcomes in induced vs. expectant management of term PROM. **METHODS** This retrospective study included patients with term PROM. A total of 325 were enrolled: 213 managed expectantly and 112 induced at admission and matched according to gestational age. Expectant management group patients were allowed to defer labour induction up to 48 h. Primary outcome measures were maternal or foetal signs of infection (chorioamnionitis, early neonatal sepsis or postpartum endometritis) and prolonged maternal hospitalization. Secondary outcome was caesarean delivery rate. **RESULTS** All group characteristics were comparable except that expectant management included more nulliparous women. Women managed expectantly had a higher rate of prolonged hospitalization [15 (7 %) vs. 2 (1.8 %); $P = 0.043$] as an indication of maternal complications, compared to induction management. They also had a higher rate of caesarean delivery [34 (16.4 %) vs. 8 (7.1 %), respectively; $P = 0.024$]. Adjustment for parity did not change the results. Early neonatal outcomes were similar between groups. **CONCLUSIONS** Expectant management increases the likelihood of caesarean delivery and

prolonged maternal hospitalization. This should be considered when advising patients with term PROM regarding labour induction.

Database: Medline

10. Perinatal outcome in women with prolonged premature rupture of membranes at term undergoing labor induction

Author(s): Ashwal E.; Krispin E.; Aviram A.; Gabby-Benziv R.; Wiznitzer A.; Aleyraz E.; Yogev Y.; Hiersch L.

Source: Archives of Gynecology and Obstetrics; Nov 2016; vol. 294 (no. 6); p. 1125-1131

Publication Date: Nov 2016

Publication Type(s): Article

Available in full text at [Archives of Gynecology and Obstetrics](#) - from Springer Link Journals

Abstract: Purpose: We aimed to evaluate perinatal outcome in women with prolonged (>24 h) premature rupture of membranes (PROM) undergoing induction of labor (IoL). Methods: We retrospectively assessed all women presenting with term (≥ 37 weeks) PROM and Bishop-score < 7 in a tertiary hospital (2012-14). Women without spontaneous onset of labor < 24 h from PROM underwent Prostaglandin E2 (PGE2) IoL and were compared to women with low Bishop-score who developed spontaneous onset of labor < 24 h. Women with IoL at < 24 h from PROM, women presenting in active labor at admission or women who did not attempt vaginal delivery were excluded. Results: Among 15,563 deliveries 1,171 (8.2 %) admitted with term PROM. Of them, 625 (53 %) were eligible; 155 (24.8 %) in the induction group and 470 (75.2 %) served as comparison group. No significant difference was found between the groups regarding maternal age, parity and obstetrical complications. Women in the induction group were at increased risk for Cesarean section (CS) (OR 8.27, CI 1.30-52.36, $p = 0.025$) and especially CS due to labor dystocia (2.97, 1.20-7.36, $p = 0.018$). The rate of neonatal complications was comparable between the groups. Conclusion: Women undergoing IoL for prolonged term PROM were at increased risk for CS compared to those with spontaneous onset of labor. However, neonatal outcome was comparable between the groups. Copyright © 2016, Springer-Verlag Berlin Heidelberg.

Database: EMBASE

11. Management of prelabour rupture of membranes at term-should we be expediting delivery and giving intrapartum antibiotic prophylaxis to all?

Author(s): Ford J.; Maher M.; Holt E.; Cocker M.

Source: BJOG: An International Journal of Obstetrics and Gynaecology; Apr 2016; vol. 123 ; p. 90

Publication Date: Apr 2016

Publication Type(s): Conference Abstract

Available in full text at [BJOG: An International Journal of Obstetrics and Gynaecology](#) - from John Wiley and Sons

Abstract:Introduction Prelabour rupture of membranes (PROM) complicates approximately 8% pregnancies at term. Most women will labour spontaneously within 24 hours, after which time National Institute for Health and Care Excellence (NICE) guidance suggests that induction of labour (IOL) is appropriate. The RCOG do not advise intrapartum antibiotic prophylaxis (IAP) except in the presence of group B streptococcus colonisation, or suspected maternal infection. In reality, IOL can take 72 hours or more. There were concerns within our unit that we should be expediting this and considering IAP for all women with PROM because of high rates of maternal sepsis. Methods We undertook a retrospective review of 151 women in our unit with PROM, focusing on maternal and neonatal outcomes. Results Seventy percent of women delivered within 35 hours of PROM. Mode of delivery was similar to our background population, although there were significantly higher rates of instrumental delivery in women with PROM 48-59 hours (relative risk [RR] 3.22; 95% CI 1.38-7.53; P 60 hours (RR 2.50; 95% CI 1.07-5.83; P = 0.03). No significant relationship was identified between PROM duration and intrapartum antibiotic use for suspected sepsis. PROM duration 48-59 hours was associated with maternal postpartum antibiotic therapy (odds ratio [OR] 15.43; 1.48-160.76; P = 0.022) and >60 hours was associated with neonatal antibiotic therapy (OR 11.25; 1.18-106.97; P = 0.035) but the confidence intervals are large. Duration of PROM was poorly correlated with length of stay ($R^2 = 0.15$, $P < 0.001$). Conclusion We concluded that there was no evidence for either expediting IOL or IAP for all, and that this would be exposing healthy women and babies to unnecessary intervention.

Database: EMBASE

12. Immediate delivery compared with expectant management after preterm pre-labour rupture of the membranes close to term (PPROMT trial): a randomised controlled trial.

Author(s): Morris, Jonathan M; Roberts, Christine L; Bowen, Jennifer R; Patterson, Jillian A; Bond, Diana M; Algert, Charles S; Thornton, Jim G; Crowther, Caroline A; PPRMT Collaboration

Source: Lancet (London, England); Jan 2016; vol. 387 (no. 10017); p. 444-452

Publication Date: Jan 2016

Publication Type(s): Research Support, Non-u.s. Gov't Randomized Controlled Trial Multicenter Study Journal Article

Available in full text at [Lancet, The](#) - from ProQuest

Abstract:BACKGROUND Preterm pre-labour ruptured membranes close to term is associated with increased risk of neonatal infection, but immediate delivery is associated with risks of prematurity. The balance of risks is unclear. We aimed to establish whether immediate birth in singleton pregnancies with ruptured membranes close to term reduces neonatal infection without increasing other morbidity.METHODS The PPRMT trial was a multicentre randomised controlled trial done at 65 centres across 11 countries. Women aged over 16 years with singleton pregnancies and ruptured membranes before the onset of labour between 34 weeks and 36 weeks and 6 days weeks who had no signs of infection were included. Women were randomly assigned (1:1) by a computer-generated

randomisation schedule with variable block sizes, stratified by centre, to immediate delivery or expectant management. The primary outcome was the incidence of neonatal sepsis. Secondary infant outcomes included a composite neonatal morbidity and mortality indicator (ie, sepsis, mechanical ventilation ≥ 24 h, stillbirth, or neonatal death); respiratory distress syndrome; any mechanical ventilation; and duration of stay in a neonatal intensive or special care unit. Secondary maternal outcomes included antepartum or intrapartum haemorrhage, intrapartum fever, postpartum treatment with antibiotics, and mode of delivery. Women and caregivers could not be masked, but those adjudicating on the primary outcome were masked to group allocation. Analyses were by intention to treat. This trial is registered with the International Clinical Trials Registry, number ISRCTN44485060.

FINDINGS Between May 28, 2004, and June 30, 2013, 1839 women were recruited and randomly assigned: 924 to the immediate birth group and 915 to the expectant management group. One woman in the immediate birth group and three in the expectant group were excluded from the primary analyses. Neonatal sepsis occurred in 23 (2%) of 923 neonates whose mothers were assigned to immediate birth and 29 (3%) of 912 neonates of mothers assigned to expectant management (relative risk [RR] 0.8, 95% CI 0.5-1.3; $p=0.37$). The composite secondary outcome of neonatal morbidity and mortality occurred in 73 (8%) of 923 neonates of mothers assigned to immediate delivery and 61 (7%) of 911 neonates of mothers assigned to expectant management (RR 1.2, 95% CI 0.9-1.6; $p=0.32$). However, neonates born to mothers in the immediate delivery group had increased rates of respiratory distress (76 [8%] of 919 vs 47 [5%] of 910, RR 1.6, 95% CI 1.1-2.30; $p=0.008$) and any mechanical ventilation (114 [12%] of 923 vs 83 [9%] of 912, RR 1.4, 95% CI 1.0-1.8; $p=0.02$) and spent more time in intensive care (median 4.0 days [IQR 0.0-10.0] vs 2.0 days [0.0-7.0]; $p<0.0001$) compared with neonates born to mothers in the expectant management group. Compared with women assigned to the immediate delivery group, those assigned to the expectant management group had higher risks of antepartum or intrapartum haemorrhage (RR 0.6, 95% CI 0.4-0.9), intrapartum fever (0.4, 0.2-0.9), and use of postpartum antibiotics (0.8, 0.7-1.0), and longer hospital stay ($p<0.0001$), but a lower risk of caesarean delivery (RR 1.4, 95% CI 1.2-1.7).

INTERPRETATION In the absence of overt signs of infection or fetal compromise, a policy of expectant management with appropriate surveillance of maternal and fetal wellbeing should be followed in pregnant women who present with ruptured membranes close to term.

FUNDING Australian National Health and Medical Research Council, the Women's and Children's Hospital Foundation, and The University of Sydney.

Database: Medline

13. Comparison of induction and expectant management of prelabour rupture of membranes at term for maternal outcome

Author(s): Maqbool S.; Usmani A.S.; Bano B.

Source: Pakistan Journal of Medical and Health Sciences; Jul 2014; vol. 8 (no. 3); p. 648-651

Publication Date: Jul 2014

Publication Type(s): Article

Abstract: Aim: To compare the outcome of active versus expectant management in patients with PROM at term. Results: The frequency of mode of delivery of patients. There were 187(67%) patients were SVD in group A and 109(39%) patients were in group B. Fetal distress had 63(22%) patients in group A and 100(36%) in group B. Similarly failed induction observed in 15(5%) patients in group A. There was comparison of lower segment caesarean section in both groups. Ninety three (33%) patients were delivered as LSCS in group A while 171(61%) patients were in group B. ($p < 0.001$), comparison of chorioamnionitis of patient in both groups. There were only 15 (5%) patients of chorioamnionitis in group A while 71(25%) patients had in group B, ($p < 0.001$). Conclusion: Active management with induction decreases the risk of chorioamnionitis, usually patients are delivered within 24 hours without increasing caesarean delivery rate and decreases the need for oxytocin augmentation. Copyright © 2014 Pakistan Journal of Medical and Health Sciences. All Rights Reserved.

Database: EMBASE

14. Active versus conservative management of prelabour rupture of membranes at term

Author(s): Yasmin S.; Yasmin A.; Khattak N.N.; Karim R.; Raees M.

Source: Journal of Postgraduate Medical Institute; 2013; vol. 27 (no. 1); p. 63-68

Publication Date: 2013

Publication Type(s): Article

Abstract: Objective: To compare maternal and foetal outcome of active versus conservative management of premature rupture of membranes after 37 completed weeks of pregnancy. Methodology: This quasi-experimental study was carried out at Gynae unit, Lady Reading Hospital, Peshawar from September 2004 to September 2005 and included 100 patients out of which 50 were managed conservatively and 50 actively. After confirming the leakage of amniotic fluid, patients were randomized by lottery method to conservative or induced group. The patients in the group that was managed conservatively were shifted to obstetrical ward to await the onset of regular uterine activity for at least 48hrs. After Bishops scoring, patients were induced with vaginal prostaglandin E2 tablet. Both groups received intravenous antibiotics. Results: Total number of patients with PROM at term was 3.84%. Total cost of stay in hospital and management was greater in induced group (P value 0.05) was observed in respect of perinatal outcome and infectious morbidity in babies. Conclusion: Conservative management of PROM at term should be viewed more positively for at least 48hrs under appropriate antibiotic cover and with active management of 3rd stage of Labour.

Database: EMBASE

15. Prelabor rupture of membranes at term and unfavourable cervix: Early induction or expectant management for up to 24 hours?

Author(s): Paraiso B.; Ubada D.; Maldonado D.; Canete M.; Rojo M.P.; Gonzalez-Valcarcel M.

Source: Journal of Perinatal Medicine; Jun 2013; vol. 41

Publication Date: Jun 2013

Publication Type(s): Conference Abstract

Abstract:INTRODUCTION Spontaneous pre-labor rupture of fetal membranes (PROM) happens in 8% of term pregnancies and its management is controversial. Awaiting spontaneous labor increases the probability of infectious disease, whereas induction of labor may lead to increased caesarean section rate. Based in the TERMPROM study, an early induction of labor at term, generally with oxytocin infusion has been recommended. However, the findings of this study are limited by the fact that cervical status was unknown in about 67% of participants. This is an important issue, given the fact that when induction of labour is carried out with intravenous oxytocin infusion in women with unfavourable cervix, the possibility of failed induction approaches 30-40%. PATIENTS AND METHODS The objective of this study is to compare induction of labor and expectant management in women with PROM and unfavourable cervix in terms of caesarean section rate and maternal and neonatal infection. We conducted a retrospective and non-randomized study including 115 women with PROM at term and unfavourable cervix (Bishop<6) that came to the Virgen de la Salud Hospital (Toledo, Spain) between January and November 2012. Analysis of data done using frequencies, mean and standard deviation. Tests of significance were used to assess the differences found. The Z-test was used to compare differences between calculated frequencies. RESULTS 67% of women in the expectant group went into spontaneous labor. The caesarean rate was a 1.56% higher in the induction group and the operative vaginal delivery rate in the induction-managed group was twice the one in the conservatively managed one. None of them reached statistical significance. There was one neonatal sepsis case which belonged to the induction group and no endometritis were diagnosed. There was no statistically significant difference in the occurrence of meconium, fetal distress and duration of hospitalization. Significant differences were found in the time until birth, which was 3.67 hours shorter in the induction group. Finally, there were differences in the rate of intrapartum fever, which was a 12% higher in the induction group ($p<0.05$). CONCLUSION We found significant higher incidence of intrapartum pyrexia in the induction group. Traditionally, the risk of intrapartum pyrexia and chorioamnionitis has been related to the duration of PROM but studies have shown that the number of vaginal examinations has a strong association with chorioamnionitis. Indeed, induced patients are longer hours in labor, with more frequent vaginal examination, and internal fetal monitoring. The study demonstrated an increment in the time lapse until birth of 3.67 hours (IC95% 0.37- 6.97) in the expectant management group. The duration of active labor was not measured. In summary, this study has shown that the expectant management for up to 24 hours does not increase the infectious morbidity, and it may decrease the rate of caesarean and operative vaginal delivery. It seems that it enlarges the time until birth, but probably not the active phase, which is the one associated with increased intrapartum pyrexia and chorioamnionitis. Therefore, this approach could be advisable in clinical practice, although randomized prospective studies would be necessary.

Database: EMBASE

16. Premature rupture of membrane at term: Early induction versus expectant management

Author(s): Shah K.; Doshi H.

Source: Journal of Obstetrics and Gynecology of India; Apr 2012; vol. 62 (no. 2); p. 172-175

Publication Date: Apr 2012

Publication Type(s): Article

Available in full text at [Journal of Obstetrics and Gynaecology of India](#) - from National Library of Medicine

Available in full text at [Journal of Obstetrics and Gynecology of India, The](#) - from Springer Link Journals

Abstract:Introduction Premature rupture of membrane is managed either expectantly or actively. The purpose of the study was to assess the effectiveness of early labor induction with cervical prostaglandin E2 versus expectant management in women with term premature rupture of membrane. Material and Methods Singleton pregnancy cases with cephalic presentation reported between 37 and 41 weeks of pregnancy with PROM of ≥ 6 h and cervical dilatation ≥ 3 cm were studied over a period of 2 years. Out of 100 patients studied, half of them were managed by expectant protocol and the other half by early induction within 6 h of PROM with intracervical gel. Main outcomes measured were PROM-delivery interval, mode of delivery, neonatal and maternal morbidity, and period of maternal and/or neonatal hospitalization. Chi-square test was used to compare frequencies between two groups. Differences between means of other measurement were compared by independent t test. Results PROM-delivery interval was 22 h in expectant group, while in early induction group, it was 13 h (p value ≤ 0.001). Rate of cesarean section remained almost same in both groups. Increases in maternal-neonatal infection rate and hospital stay were noted in expectant group; however, this was not statistically significant. Conclusion Immediate labor induction with prostaglandin in cases of term PROM shortens delivery interval and maternal hospital stay with reduction in maternal-neonatal sepsis. © Federation of Obstetric & Gynecological Societies of India 2012.

Database: EMBASE

17. Prelabor rupture of the membranes at term: when to induce labor?

Author(s): Ezra, Yossef; Michaelson-Cohen, Rachel; Abramov, Yoram; Rojansky, Nathan

Source: European journal of obstetrics, gynecology, and reproductive biology; Jul 2004; vol. 115 (no. 1); p. 23-27

Publication Date: Jul 2004

Publication Type(s): Journal Article

Abstract:**OBJECTIVE**To determine the significant predictors of clinical chorioamionitis and neonatal infection in patients with prelabor rupture of the membranes at term, and to apply this information to determination of optimal timing of labor induction.**STUDY DESIGN**A retrospective case control series of women at ≥ 37 weeks' with prelabor rupture of the membranes. The study group consisted of women with evidence of maternal or neonatal infection. Controls had no evidence of infection. Three types of management were compared. (1) Immediate induction of labor, (2) expectant management up to 24 h followed by induction of labor if still necessary, or (3) expectant management for over 24 h. Univariate and multivariate analyses were performed by stepwise logistic regression (SPSS software package). The size of the study and the control groups was calculated for a 90% power with two sided P value of 0.05 in order to demonstrate an odds ratio of 2 for expectant management (two groups: early and late) versus immediate induction of labor (132 and 279 women in the study and the control groups, respectively).**RESULT**The rate of expectant management for over 24 h versus expectant management until 24 h followed by induction of labor

when still necessary, was higher among cases than among controls (OR = 1.84; P < 0.017; 95% CI, 1.127-3.003). Conversely, the rate of immediate induction of labor versus expectant management until 24 h followed by induction of labor when still necessary, was also higher among cases (OR = 2.66; P < 0.001; 95% CI, 0.222-0.644).CONCLUSIONIn women with prelabor rupture of the membranes at term, the best approach is to induce labor if spontaneous labor has not begun after 24 h.

Database: Medline

18. Prolonged rupture of membranes in the term newborn.

Author(s): Marlowe, S E; Greenwald, J; Anwar, M; Hiatt, M; Hegyi, T

Source: American journal of perinatology; Sep 1997; vol. 14 (no. 8); p. 483-486

Publication Date: Sep 1997

Publication Type(s): Journal Article

Abstract:Of 8791 consecutive newborns, we studied 205 (2.3%) women with a history of prolonged rupture of membranes (PROM) greater than 24 hr to assess the incidence of infection, to identify the rate of clinical symptoms, and to examine the use of the white blood count (WBC) and neutrophil values as screening tools to predict infection. Blood culture and complete blood counts (CBC) were obtained in 175 (85%). Fifteen (8.2%) had positive blood cultures including group B streptococcus, streptococcus viridans, streptococcus pneumoniae, staphylococcus epidermidis, and staphylococcus aureus. In the remaining 8586 infants born to mothers without PROM, 10 had positive blood cultures for an incidence of 0.1%. In the PROM group, the six who manifested clinical symptoms had abnormal CBCs; abnormal white blood count (2), abnormal neutrophil count (5), high band/metatamyelocyte count (4), and increased immature to total neutrophil ratio (4). Of the nine asymptomatic infants, seven (78%) had abnormal CBCs, five (56%) with a high WBC, five (56%) had a high neutrophil count, two (22%) had a high band/metatamyelocyte count, and one a high immature to total neutrophil ratio. CBC values were obtained from infants with PROM and negative blood cultures. Five of these 15 controls had an abnormal CBC. In the term newborn, PROM is associated with significantly increased incidence of positive blood cultures. The sensitivity of the CBC was 86% and specificity 66%. In view of this data a conservative clinical approach utilizing blood cultures and CBC evaluations in the management of PROM is warranted.

Database: Medline

19. Premature rupture of membranes at term: a meta-analysis of three management schemes.

Author(s): Mozurkewich, E L; Wolf, F M

Source: Obstetrics and gynecology; Jun 1997; vol. 89 (no. 6); p. 1035-1043

Publication Date: Jun 1997

Publication Type(s): Meta-analysis Journal Article Research Support, U.s. Gov't, P.h.s.

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Obstetrics and Gynecology

Available in full text at [Obstetrics and Gynecology](#) - from Ovid

Abstract:OBJECTIVETo compare rates of cesarean birth, endometritis, chorioamnionitis, and serious neonatal infections among pregnancies complicated by premature rupture of membranes (PROM) at term and managed by immediate oxytocin induction, by conservative management (or delayed oxytocin induction), or by vaginal (or endocervical) prostaglandin E₂ gel, suppositories, or tablets.DATA SOURCEThe English-language literature in MLD, LINE and other databases was searched through April 1996 using the terms "fetal membranes," "premature rupture," and "term."METHODS OF STUDY SELECTIONWe included randomized trials comparing two or more management schemes for PROM at term.TABULATION, INTEGRATION, AND RESULTSTwenty-three studies with a total of 7493 subjects met the inclusion criteria and were included for analysis. Data regarding chorioamnionitis, endometritis, neonatal infections, and cesarean delivery were extracted. Meta-analyses were performed for the three interventions for these outcomes of interest using the Der-Simonian and Laird and Mantel-Haenszel techniques to estimate the pooled odds ratios (ORs). No statistically significant differences in cesarean deliveries or neonatal infections were noted among management schemes. Vaginal prostaglandins resulted in more chorioamnionitis than immediate oxytocin (OR 1.55, 95% confidence interval [CI] 1.09, 2.21), but less chorioamnionitis than conservative management (OR 0.68, 95% CI 0.51, 0.91). Immediate oxytocin induction resulted in fewer cases of chorioamnionitis (OR 0.67, 95% CI 0.52, 0.85) and endometritis (OR 0.71, 95% CI 0.51, 0.99) than conservative management, although these results achieved significance only with the Mantel-Haenszel technique.CONCLUSIONConservative management may result in more maternal infections than immediate induction with oxytocin or prostaglandins.

Database: Medline

20. Controversies: premature rupture of membranes at term--no advantage of delaying induction > 24 hours.

Author(s): Ingemarsson, I

Source: Journal of perinatal medicine; 1996; vol. 24 (no. 6); p. 573-579

Publication Date: 1996

Publication Type(s): Journal Article Review

Abstract:Results from randomised trials with formal randomisation indicate no evidence of benefits in terms of cesarean delivery of maternal/neonatal infectious morbidity by awaiting spontaneous onset of labor for more than 24 hours in women with term PROM. An overnight policy of management seems to be an attractive alternative to other management protocols. Women with prelabor rupture of membranes await stimulation of labor with oxytocin till next morning if admitted before midnight. A majority of the women may go into spontaneous labor with an excellent prospect of having a vaginal delivery. Particularly the nulliparous woman with poor cervical score could benefit from such an approach. Although prostaglandins in theory should be an useful adjunct agent to oxytocin, particularly in the nulliparous woman with unripe cervix, convincing evidence of the

efficacy of the drug is still lacking. Well-conducted and randomised studies to evaluate the role of prostaglandins in nulliparous women with PROM are required.

Database: Medline

21. Controlled comparison of induction versus expectant care for prelabor rupture of the membranes at term.

Author(s): Ottervanger, H P; Keirse, M J; Smit, W; Holm, J P

Source: Journal of perinatal medicine; 1996; vol. 24 (no. 3); p. 237-242

Publication Date: 1996

Publication Type(s): Comparative Study Randomized Controlled Trial Clinical Trial Journal Article

Abstract: This randomized clinical trial compared oxytocin induction of labor with expectant care for 48 hours after prelabor rupture of the membranes at term. Women at term with prelabor rupture of the membranes for at least 8 hours were assigned at random to induction with oxytocin or to expectant management for 48 hours followed by induction if necessary. Of 168 eligible women, 123 (73%) agreed to participate. More women in the induction group (23%) than in the expectant group (10%) had operative delivery, either cesarean section or instrumental vaginal delivery. In the induction group 41% received analgesia versus 24% in the expectant group ($p < 0.005$). There was no difference in the rate of maternal and neonatal infection between groups and sepsis was not observed. The active policy of oxytocin induction exposed the mother to a higher risk of operative delivery and a less comfortable labor than the 48 hours expectant care option.

Database: Medline

22. Induction of labor compared with expectant management for prelabor rupture of the membranes at term. TERMPROM Study Group.

Author(s): Hannah, M E; Ohlsson, A; Farine, D; Hewson, S A; Hodnett, E D; Myhr, T L; Wang, E E; Weston, J A; Willan, A R

Source: The New England journal of medicine; Apr 1996; vol. 334 (no. 16); p. 1005-1010

Publication Date: Apr 1996

Publication Type(s): Research Support, Non-u.s. Gov't Comparative Study Randomized Controlled Trial Clinical Trial Journal Article

Available in full text at [New England Journal of Medicine](#) - from Free Access Content

Available in full text at [New England Journal of Medicine, The](#) - from ProQuest

Abstract: **BACKGROUND** As the interval between rupture of the fetal membranes at term and delivery increases, so may the risk of fetal and maternal infection. It is not known whether inducing labor will reduce this risk or whether one method of induction is better than another. **METHODS** We studied 5041 women with prelabor rupture of the membranes at term. The women were randomly assigned to induction of labor with intravenous oxytocin; induction of labor with vaginal prostaglandin E2 gel; or expectant management for up to four days, with labor induced with either intravenous oxytocin or vaginal prostaglandin E2 gel if complications developed. The primary outcome was neonatal infection. Secondary outcomes were the need for cesarean section and women's evaluations of their treatment. **RESULTS** The rates of neonatal infection and cesarean section were not significantly different among the study groups. The rates of neonatal infection were 2.0 percent for the induction-with-oxytocin group, 3.0 percent for the induction-with-prostaglandin group, 2.8 percent for the expectant-management (oxytocin) group, and 2.7 percent for the expectant-management (prostaglandin) group. The rates of cesarean section ranged from 9.6 to 10.9 percent. Clinical

chorioamnionitis was less likely to develop in the women in the induction-with-oxytocin group than in those in the expectant-management (oxytocin) group (4.0 percent vs. 8.6 percent, $P<0.001$), as was postpartum fever (1.9 percent vs. 3.6 percent, $P=0.008$). Women in the induction groups were less likely to say they liked "nothing" about their treatment than those in the expectant-management groups. **CONCLUSIONS** In women with prelabor rupture of the membranes at term, induction of labor with oxytocin or prostaglandin E2 and expectant management result in similar rates of neonatal infection and cesarean section. Induction of labor with intravenous oxytocin results in a lower risk of maternal infection than does expectant management. Women view induction of labor more positively than expectant management.

Database: Medline

23. Premature rupture of the membranes (PROM) at term in nulliparous women with a ripe cervix. A randomized trial of 12 or 24 hours of expectant management.

Author(s): Hjertberg, R; Hammarström, M; Moberger, B; Nordlander, E; Granström, L

Source: Acta obstetricia et gynecologica Scandinavica; Jan 1996; vol. 75 (no. 1); p. 48-53

Publication Date: Jan 1996

Publication Type(s): Randomized Controlled Trial Clinical Trial Journal Article

Abstract: **OBJECTIVE** To compare maternal and neonatal outcomes after 12 or 24 hours of expectant management in healthy nulliparous women with a ripe cervix and PROM at term. **DESIGN** A prospective, randomized study. **LOCATION** Karolinska Hospital, Stockholm, Sweden. **SUBJECTS** Two hundred and five healthy nulliparous women with singleton pregnancies, cephalic presentation, gestational duration 36 to 42 weeks, randomized to 12 or 24 hours of expectant management after evaluation of the cervical score (> 5). If spontaneous labor did not occur, induction was performed with oxytocin after 12 or 24 hours, respectively. **MAIN PARAMETERS:** Maternal early morbidity and neonatal infections, obstetric intervention rate (cesarean section or instrumental delivery). **RESULTS** The cesarean section rate was 4% in each group. The vacuum extraction rate was 21% in each group. Induction of labor was performed in 47% of the women allocated to 12 hours of expectant management vs 17% of the women allocated to 24 hours of expectant management ($p < 0.05$). The maternal morbidity rate was almost negligible. Only a few fetal infections occurred and no difference was noted between the groups. **CONCLUSIONS** In healthy nulliparous women at term with a ripe cervix, expectant management over 24 hours vs 12 hours resulted in fewer inductions of labor and no increase in instrumental deliveries, without any increase in neonatal or maternal morbidity.

Database: Medline

24. Prelabour rupture of membranes to delivery interval related to the incidence of maternal and neonatal infection

Author(s): Chua S.; Arulkumaran S.; Kumar S.S.; Selamat N.; Ratnam S.S.

Source: Journal of Obstetrics and Gynaecology; 1995; vol. 21 (no. 4); p. 367-372

Publication Date: 1995

Publication Type(s): Article

Abstract:Objective: To assess the infectious morbidity associated with prelabour rupture of membranes (PROM) to delivery interval, and the incidence of maternal and neonatal infection in a population managed by either immediate stimulation or by overnight conservatism. Method: A retrospective study of 117 women admitted with PROM to the labour ward in the National University Hospital, Singapore, in the period between June 1990 and May 1991, and who were managed by immediate stimulation or by stimulation after overnight conservatism. Statistical analysis was performed using Chi-square and Student's t-test. Results: More than one third of infants whose mothers had ruptured membranes for > 48 hrs had signs of neonatal infection, compared with an incidence of 8.8% and 8.9%, respectively for those with an interval of < 48 hrs increases the incidence of infection. Conservative policy of management of PROM at term should aim to deliver the babies < 48 hrs after PROM. The difference in maternal and neonatal infection rates were not significant in the group treated with a policy of overnight conservatism compared with the group in whom labour was stimulated immediately on admission.

Database: EMBASE

25. Conservative ambulatory management of prelabor rupture of the membranes at term in nulliparous women

Author(s): Hagskog K.; Nisell H.; Sarman I.; Westgren M.

Source: Acta Obstetricia et Gynecologica Scandinavica; 1994; vol. 73 (no. 10); p. 765-769

Publication Date: 1994

Publication Type(s): Article

Abstract:Objective. To assess maternal and fetal outcome at conservative ambulatory care of nulliparous women at term with prelabor rupture of the membranes. Methods. A prospective study of 176 women managed conservatively in an ambulatory setting (nonstress test and assessment of amniotic fluid index every second day). Results. The median rupture of the membrane to delivery interval was 30 hours. Ninety per cent were delivered within 85 hours. The patients were divided into three groups according to the time period between rupture of membranes and delivery (under the 25th, 25th-75th and above the 75th centile). The maternal infectious morbidity (0, 6, 7% respectively), fetal distress (5, 18, 17% respectively) and instrumental delivery rate (5, 16, 16% respectively) tended to be increased in the upper three quartiles, without reaching a statistically significant level as analysed by chi2-test. Nonstress test or evaluation of amniotic fluid index was not able to predict intrapartum fetal distress. In no case was there a delay in the management of any complication due to the ambulatory care. Conclusion. Awaiting spontaneous labor in nulliparous women with prelabor rupture of the membranes at term does not seem to be associated with any obvious advantage. If, however, a conservative attitude is implemented, the patients can preferably be treated on an ambulatory basis.

Database: EMBASE

26. Management of premature rupture of membranes at term: randomized trial.

Author(s): Natale, R; Milne, J K; Campbell, M K; Potts, P G; Webster, K; Halinda, E

Source: American journal of obstetrics and gynecology; Oct 1994; vol. 171 (no. 4); p. 936-939

Publication Date: Oct 1994

Publication Type(s): Research Support, Non-u.s. Gov't Comparative Study Randomized Controlled Trial Clinical Trial Journal Article

Abstract:OBJECTIVEWe hypothesize that expectant management in the presence of premature rupture of membranes at term would result in a lower cesarean birth rate with no increase in maternal, fetal, or neonatal infection.STUDY DESIGNTerm patients who consented to the study were randomly allocated either to expectant management for 48 hours or to induction of labor 8 hours after premature rupture of membranes. Premature rupture of membranes was confirmed by sterile speculum examination of the vagina. Patients randomized to expectant management were transferred to antenatal care and were not examined vaginally until they went into labor. Patients randomized to induction of labor had induction with oxytocin 8 hours after premature rupture of membranes.RESULTSTwo hundred sixty-two patients were randomized to the expectant management and induction of labor groups. The cesarean birth rate and the clinical diagnosis of postpartum endometritis was not significantly different in the two groups. Pathologic diagnosis of chorioamnionitis and funisitis, however, was significantly greater in the expectant management group ($p < 0.05$). Eight of the 15 babies with funisitis were admitted to the neonatal intensive care unit for therapy (two in the induction of labor group and six in the expectant management group, $p < 0.05$).CONCLUSIONExpectant management did not reduce the incidence of cesarean birth and increased the pathologic diagnosis of funisitis and newborn requirements for neonatal intensive care.

Database: Medline

27. No benefit from conservative management in nulliparous women with premature rupture of the membranes (PROM) at term. A randomized study

Author(s): Rydhstrom H.; Ingemarsson I.

Source: Acta Obstetricia et Gynecologica Scandinavica; 1991; vol. 70 (no. 7); p. 543-547

Publication Date: 1991

Publication Type(s): Article

Abstract:Objective. To compare maternal and fetal outcome in pregnancies with premature rupture of the membranes (PROM) at term with either early induction of labor or conservative management awaiting spontaneous labor. Design. A prospective randomized trial. Setting. The University Hospital of Lund, Sweden. Subjects. Altogether 369 women with singleton pregnancy, cephalic presentation, gestational duration 36-41 weeks were randomized either to induction of labor ($n = 139$) or conservative management up to 3 days ($n = 138$). Those eligible but not participating in the study totalled 92. Main obstetric measures. Obstetric intervention rate (cesarean section or instrumental delivery) and short-term neonatal morbidity. Results. No difference was found in the rate of obstetric intervention between the induction of labor group and the group with conservative management (12.2 vs. 18.8%; $X^2 = 2.3$, $p > 0.05$). A slightly increased rate of neonatal infections was seen in the latter group (0.7 vs. 4.3 %; $X^2 = 3.2$, $p < 0.05$). Conclusions. We found no benefit from conservative management for up to 3 days in women with PROM at term, compared with immediate induction of labor. There was no difference in the number of obstetric interventions during labor. The neonatal infectious morbidity was slightly higher in conservatively managed cases.

Database: EMBASE

28. Prolonged rupture of the fetal membranes and neonatal outcome.

Author(s): Verber, I G; Pearce, J M; New, L C; Hamilton, P A; Davies, E G

Source: Journal of perinatal medicine; 1989; vol. 17 (no. 6); p. 469-476

Publication Date: 1989

Publication Type(s): Journal Article

Abstract:In order to establish the incidence of neonatal infection following prolonged (greater than 24 hours) rupture of the fetal membranes (PROM) and assess outcome of two year retrospective study was undertaken. The names of all babies born following PROM were obtained from the computerised obstetric record and the bacteriological results and outcome reviewed. Of 208 babies born following PROM only three had blood cultures containing pathogens--all of whom were of less than 1500 g birthweight and all of whom died. This represents a fivefold increased frequency of infection for premature babies but no increased risk for full term babies. The overall incidence of infection was much lower than in previous series and this may be due to performing amniocentesis as soon as possible following rupture and inducing labour where there was evidence of incipient chorioamnionitis. Meningitis was not associated with prolonged rupture of the membranes. The mortality for these babies was higher than those of babies without PROM in the 28-31 week gestation group. This was strongly associated with early onset of membrane rupture and none of the babies born following membrane rupture prior to 20 weeks gestation survived. Non-infective pulmonary disease was the main cause of increased mortality.

Database: Medline

29. Management of spontaneous rupture of the membranes in the absence of labor in primigravid women at term.

Author(s): Conway, D I; Prendiville, W J; Morris, A; Speller, D C; Stirrat, G M

Source: American journal of obstetrics and gynecology; Dec 1984; vol. 150 (no. 8); p. 947-951

Publication Date: Dec 1984

Publication Type(s): Journal Article

Abstract:One hundred and thirty-five healthy primigravid women at or near term with spontaneous rupture of the membranes without uterine contractions were submitted to a prospective trial of management. Rupture of the membranes was diagnosed by speculum examination. If labor did not commence, induction was performed by oxytocin infusion starting at 9 AM following admission. One hundred and five women went into labor spontaneously before induction became necessary. Sixty-three of these women required augmentation with oxytocin. Twenty-seven percent of the induced group required cesarean section delivery compared to 10% of those in spontaneous labor augmented by oxytocin and to none of those who did not require oxytocin (p less than 0.01). Ninety-four percent of those in spontaneous labor were delivered vaginally compared to 73% of the induced group (p less than 0.01). Forty-one percent of the augmented group were delivered by forceps. Awaiting the spontaneous onset of labor for 24 hours or less did not result in clinical maternal or neonatal infection. We would therefore advocate awaiting the spontaneous onset of labor after spontaneous rupture of membranes without contractions at or near term in healthy primigravid women for up to 24 hours because it seems to confer significant advantages without producing any additional hazard.

Database: Medline

Strategy 218102

#	Database	Search term	Results
1	Medline	(rupture* ADJ2 membrane*).ti,ab	9450
2	Medline	exp "FETAL MEMBRANES, PREMATURE RUPTURE"/	6406
3	Medline	(1 OR 2)	12269
4	Medline	("at term").ti,ab	14541
5	Medline	("full term").ti,ab	14427
6	Medline	exp "TERM BIRTH"/	2239
7	Medline	(4 OR 5 OR 6)	29791
8	Medline	(infect* OR septic* OR sepsis).ti,ab	1532303
9	Medline	exp "BACTERIAL INFECTIONS"/	823212
10	Medline	exp SEPSIS/	106387
11	Medline	(chorioamnionitis).ti,ab	3281
12	Medline	exp CHORIOAMNIONITIS/	2556
13	Medline	(8 OR 9 OR 10 OR 11 OR 12)	2065386
14	Medline	(3 AND 7 AND 13)	485
15	Medline	(24h OR "twenty four hours" OR "24 hours" OR 24hours).ti,ab	120943
16	Medline	exp "TIME FACTORS"/	1087555
17	Medline	(prolonged OR delay*).ti,ab	647268
18	Medline	(15 OR 16 OR 17)	1744558

19	Medline	(14 AND 18)	95
20	Medline	(expectant*).ti,ab	5590
21	Medline	(3 AND 7 AND 13 AND 20)	46
22	EMBASE	(rupture* ADJ2 membrane*).ti,ab	10108
23	EMBASE	exp "PREMATURE FETUS MEMBRANE RUPTURE"/	8036
24	EMBASE	(22 OR 23)	14147
25	EMBASE	("at term" OR "full term").ti,ab	37496
26	EMBASE	(term ADJ2 pregnan*).ti,ab	9738
27	EMBASE	exp "TERM BIRTH"/	2748
28	EMBASE	(25 OR 26 OR 27)	44906
29	EMBASE	(24h OR "twenty four hours" OR "24 hours" OR 24hours).ti,ab	183765
30	EMBASE	(prolonged OR delay*).ti,ab	840701
31	EMBASE	exp TIME/	509166
32	EMBASE	(expectant*).ti,ab	7546
33	EMBASE	(29 OR 30 OR 31 OR 32)	1488209
34	EMBASE	(infect* OR septic* OR sepsis).ti,ab	1925324
35	EMBASE	exp "NEWBORN SEPSIS"/	6075
36	EMBASE	(chorioamnionitis).ti,ab	4887
37	EMBASE	exp "INFECTION RATE"/ OR exp INFECTION/	2957849
38	EMBASE	exp CHORIOAMNIONITIS/	7059

39	EMBASE	(34 OR 35 OR 36 OR 37 OR 38)	3505503
40	EMBASE	(24 AND 28 AND 33 AND 39)	162
41	EMBASE	(TPROM).ti,ab	9
42	EMBASE	(term ADJ2 PROM).ti,ab	193
43	EMBASE	(41 OR 42)	202
44	EMBASE	(39 AND 43)	120
45	EMBASE	(conservative*).ti,ab	135736
46	EMBASE	(24 AND 28 AND 39 AND 45)	25
47	Medline	(conservative*).ti,ab	103692
48	Medline	(3 AND 7 AND 13 AND 47)	16
49	CINAHL	(rupture* ADJ2 membrane*).ti,ab	1362
50	CINAHL	exp "FETAL MEMBRANES, PREMATURE RUPTURE"/	1491
51	CINAHL	(49 OR 50)	0
52	CINAHL	("at term" OR "full term" OR "term pregnancy").ti,ab	112486
53	CINAHL	exp "TERM BIRTH"/	375
54	CINAHL	(52 OR 53)	112591
55	CINAHL	(24h OR "twenty four hours" OR "24 hours" OR 24hours).ti,ab	22246
56	CINAHL	(prolonged OR delay*).ti,ab	51539
57	CINAHL	(expectant*).ti,ab	1300
58	CINAHL	(conservative*).ti,ab	9197

59	CINAHL	exp "TIME FACTORS"/	77542
60	CINAHL	(55 OR 56 OR 57 OR 58 OR 59)	150882
61	CINAHL	(51 AND 54 AND 60)	97
62	Medline	(hours).ti	9243
63	Medline	(3 AND 7 AND 13 AND 62)	3
64	Medline	(hours).ti,ab	372777
65	Medline	(3 AND 7 AND 13 AND 64)	101