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Date: 05 Jun 2017

Sources Searched: Medline, Embase, CINAHL, DynaMed Plus

Rupture of Membranes and Spontaneous Onset of Labour

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Evidence Summary:

Rupture of Membranes at Term:

- Premature rupture of membranes (PROM) at term refers to the rupture of chorioamniotic membranes ≥ 1 hour prior to the onset of labour in women at ≥ 37 weeks gestation.
- According to the NICE [guideline Intrapartum care for healthy women and babies](#) (2014) 60% of women with pre-labour rupture of membranes at term will go into labour within 24 hours.
- In a recent large study, 76.5% of women with term PROM went into labour within 24 hours, and 90% were in labour within 48 hours ([Pintucci et al., 2014](#)). Although some of these women (16%) were induced, most (84%) went into labour on their own.
- If women with PROM are not induced, around 45% will go into labour within 12 hours ([Shalev et al., 1995](#); [Zlatnik, 1992](#)).
- Between 77% and 95% will go into labour within 24 hours of rupture of membranes ([Conway et al., 1984](#); [Pintucci et al., 2014](#); [Zlatnik, 1992](#)).

Premature Rupture of Membranes (PPROM):

- Preterm premature rupture of membranes (PPROM) refers to a rupture of chorioamniotic membranes ≥ 1 hour prior to onset of labour in pregnancy prior to 37 weeks gestation.
- The latency period (time to labour onset) may be longer in women with second-trimester PPRM than with PPRM at later gestational age.
- 40%-50% will deliver within 1 week of membrane rupture.
- 70%-80% will deliver within 2-5 weeks of membrane rupture.

Sources:

National Institute for Health and Clinical Excellence (NICE). Guideline on intrapartum care of healthy women and their babies during childbirth. NICE 2014 Dec:CG190 [PDF](#).

Evidence-Based Birth (2014) What is the evidence for inducing labor if your waters break at term?

URL: <https://evidencebasedbirth.com/evidence-inducing-labor-water-breaks-term/>

[last accessed

06/06/2017]

DynaMed Plus [Internet]. Ipswich (MA): EBSCO Information Services. 1995 - . Record No. 115900, Premature rupture of membranes at term (term PROM); [updated 2015 Jul 13,6/6/2017]; [about 10 screens]. Available from <http://www.dynamed.com/login.aspx?direct=true&site=DynaMed&id=115900>

DynaMed Plus [Internet]. Ipswich (MA): EBSCO Information Services. 1995 - . Record No. 435299, Preterm premature rupture of membranes (PPROM); [updated 2017 Feb 05, cited **06/06/2017** [about 19 screens]. Available from <http://www.dynamed.com/login.aspx?direct=true&site=DynaMed&id=435299> .

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

Author(s): Pintucci, Armando; Meregalli, Virginio; Colombo, Paolo; Fiorilli, Angelo

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

Publication Date: Mar 2014

Publication Type(s): Journal Article Observational Study

Abstract:AIMHow long the waiting time may be for the onset of spontaneous labor after prelabor rupture of fetal membranes at term (tPROM) remains controversial.METHODThe 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.RESULTStPROM 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.

Database: Medline

2. 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.OBJECTIVESThe 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 METHODSWe searched Cochrane Pregnancy and Childbirth's Trials Register (9 September 2016) and reference lists of retrieved studies.SELECTION CRITERIARandomised 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 ANALYSISTwo 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 RESULTSTwenty-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 OUTCOMESwomen 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' CONCLUSION 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

3. Predicators for short latency period to delivery in p-PROM at less than 34 weeks of gestation

Author(s): Wertheimer A.; Fraiman-Hakerem N.; Hadar E.; Wiznitzer A.; Ashwal E.; Aviram A.; Yogev Y.; Hiersch L.

Source: American Journal of Obstetrics and Gynecology; Jan 2017; vol. 216 (no. 1)

Publication Date: Jan 2017

Publication Type(s): Conference Abstract

Abstract: **OBJECTIVE:** To identify factors affecting the duration of the latency period to delivery in women presenting with preterm premature rupture of membranes (PPROM) at 2cm at presentation or with immediate indicated delivery for indications other than suspected chorioamnionitis were excluded. **RESULTS:** 1) Overall, among 59,935 deliveries during the study period 459 (1.5%) presented as PPRM <34 week of gestation, of them 299 met inclusion criteria. 2) Latency period exceeded 48 hours in 41.5% of cases and 7 days in only 22.4% of cases. 3) Latency period was not affected by classical risk factors for preterm delivery (PTD) such as previous PPRM or preterm delivery, previous late abortion or uterine anomalies (Table). 4) While mean latency period was 3.3 (2.6-4.0) days in women presenting at 30-33 weeks, in those presenting at 23-26 weeks it was 14.6 (8.2-20.9) days ($P < 0.001$), confirming an inverse relation between gestational age at PPRM and latency period (Figure). 5) Using Cox proportional hazards model, gestational age at admission ($HR = 1.15$, 95%CI 1.09-1.22, $p < 0.0001$), contraction at admission ($HR = 1.45$, 95%CI 1.13-1.88, $p = 0.004$) and multifetal gestation ($HR = 2.00$, 95%CI 1.47-2.71, $p < 0.0001$) were associated with short latency period. **CONCLUSION:** Several predictive factors for short latency period in cases of PPRM <34 weeks of gestation were identified. This information may assist in risk stratification and consultation for women presenting with PPRM <34 weeks of gestation. (Table Presented).

Database: EMBASE

4. Management of Preterm Premature Rupture of Membranes: A Comparison of Inpatient and Outpatient Care

Author(s): Catt E.; Chadha R.; Tang S.; Palmquist E.; Lange I.

Source: Journal of Obstetrics and Gynaecology Canada; 2016; vol. 38 (no. 5); p. 433-440

Publication Date: 2016

Publication Type(s): Article

Abstract: Objectives We sought to evaluate the safety of outpatient management of pregnancy complicated by preterm premature rupture of membranes (PPROM). Study Design We performed a retrospective cohort study of women with PPRM and a latency period of at least one week in one provincial health region between January 2007 and December 2012. We evaluated pregnancy outcomes for 133 women whose cases were managed using specialized community care and compared these with outcomes of a similar group of 122 women whose cases were managed entirely in the hospital. The primary outcome measured was the difference in the latency period between the two groups. For categorical variable outcomes, data were analyzed using chi-square tests, and continuous variable outcomes were compared using t tests. Results The median latency period for inpatients was 11 days compared with 18 days for patients in the community ($P < 0.001$). The most common reason for delivery was spontaneous labour (57% of inpatients and 50% of outpatients). Rates of stillbirth and neonatal mortality were similar between the two groups (3% in the inpatient group and 4% in the outpatient group). Precipitous vaginal delivery of a preterm breech infant was associated with mortality. Umbilical cord pH was < 7.10 in 5% of the inpatient group and 3% of the outpatient group. Median Apgar scores were slightly higher among the outpatient group. Conclusion The safety of outpatient management of appropriately selected patients with PPRM is comparable with the safety of in-hospital management. Patients with PPRM and a fetus in breech presentation may not be appropriate for outpatient management, especially prior to 28 weeks' gestation. The decision to manage a patient with PPRM on an outpatient basis must be made after careful evaluation, with a thorough discussion of the risks and benefits and with serial reassessment of patient suitability. Copyright © 2016 The Society of Obstetricians and Gynaecologists of Canada/La Societe des obstetriciens et gynecologues du Canada

Database: EMBASE

5. The predictive value of lactate levels in vaginal fluid on the latent period in pregnant women with preterm premature rupture of membranes.

Author(s): Sariaslan, S; Cakmak, B; Seckin, K D; Karsli, M F; Tetik, K; Gulerman, H C

Source: Journal of obstetrics and gynaecology : the journal of the Institute of Obstetrics and Gynaecology; 2016; vol. 36 (no. 3); p. 297-300

Publication Date: 2016

Publication Type(s): Journal Article Observational Study

Abstract: The aim of the present study was to investigate the relationship between lactate level in vaginal fluid and the latent phase of labour in pregnancies complicated by preterm premature rupture of membranes (PPROM). Seventy pregnant women with PPRM during 28-34 weeks' gestation were selected for this prospective observational study. All subjects underwent a pelvic examination involving the insertion of a vaginal speculum, and lactate levels were measured in vaginal fluid samples. The relationship between the lactate levels in the vaginal fluid and the latent phase of the labour was analysed using a logistic regression test. Of the patients, 48 (68.6%) had a

latent period of 48 h or less, and 22 patients (31.4%) had a latent period longer than 48 h. The median lactate level was 3.81 mmol/L in patients with a latent period \leq 48 h, and 3.36 mmol/L in patients with a latent period $>$ 48 h. The lactate level in vaginal fluid was not found to be distinctive in the differentiation of patients according to the duration of the latent phase (receiver operating characteristic or ROC: 0.509; 95% confidence interval or CI: 0.361-0.657; $p = 0.904$). There was no significant correlation between the lactate level in the vaginal fluid and the transition from the latent phase to the active phase of labour in pregnancies complicated by PPROM.

Database: Medline

6. 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; PPROMT 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 PPROMT 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 \geq 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

7. Expectant vs active management of prelabour rupture of membranes at term

Author(s): Fatima S.; Rizvi S.; Saeed G.; Jafri A.; Eusaph A.; Haider R.

Source: Pakistan Journal of Medical and Health Sciences; 2015; vol. 9 (no. 4); p. 1353-1357

Publication Date: 2015

Publication Type(s): Article

Abstract: Background: Despite multiple study trials, the management of Term PROM is still controversial. The current study was carried out in our population to compare the results of both active and expectant management that will be applicable for management of such patients in future. Aim: To compare the outcomes of active versus expectant management in patients with term PROM in terms of cesarean section rate, mean latency period & chorioamnionitis. Study design: Randomized controlled trial Settings: Department of Obs. & Gynae, Allama Iqbal Medical College, Jinnah Hospital Lahore. Duration: Six months period (1st January 2013 to 30th June 2013). Methods: Two hundred women with rupture membranes at or >37 weeks gestation fulfilling the inclusion criteria were enrolled in this study. The cases selected were allocated randomly through lottery method into two groups i.e. Group A (actively managed group) was induced with tablet misoprostol and Group B (expectantly managed group) watched for spontaneous occurrence of labour within 24 hrs after PROM. Data was compiled, transferred and analyzed through SPSS (version 10). Means and standard deviations were calculated for quantitative data e.g., age, latency period. Chi square was applied for comparison of outcome variables i.e., C-section & chorioamnionitis and t test was used to compare the mean latency period in both groups. Results: The induction to labour interval was significantly shorter in induced group. Delivery within 12 hours occurred in 97(97%) cases of group A and 83(83%) cases in group B while within 24 hours occurred in all 100(100%) and 97(97%) cases respectively. There was no statistically significant difference in the duration of labour and also in the mode of delivery. There was also no statistically significant difference in Apgar score at 5 minutes and admission of neonates to intensive care unit (87% and 80%) in group A and group B respectively. Conclusion: There was no difference in the active and expectant management in patients with prelabour rupture of membranes at term.

Database: EMBASE

8. Length of Latency with Preterm Premature Rupture of Membranes before 32 Weeks' Gestation.

Author(s): Peaceman, Alan M.; Lai, Yinglei; Rouse, Dwight J.; Spong, Catherine Y.; Mercer, Brian M.; Varner, Michael W.; Thorp, John M.; Ramin, Susan M.; Malone, Fergal D.; O'Sullivan, Mary J.; Hankins, Gary D.V.

Source: American Journal of Perinatology; Jan 2015; vol. 32 (no. 1); p. 57-61

Publication Date: Jan 2015

Publication Type(s): Academic Journal

Abstract:Objective: The objective of the article is to describe latency for patients with preterm premature membrane rupture (PPROM) between 24 0/7 and 31 6/7 weeks' gestation. Study Design: Secondary analysis of data collected prospectively in a multicenter clinical trial of magnesium sulfate for cerebral palsy prevention. Women with PPRM and fewer than six contractions per hour at enrollment who were candidates for expectant management (n = 1,377) were included in this analysis. Length of latency was calculated in days by subtracting the time of delivery from the time of membrane rupture. Results: At each week of gestation, median latency between 24 and 28 weeks was similar at approximately 9 days, but it was significantly shorter with PPRM at 29, 30, and 31 weeks (p < 0.001). In addition, the percentage of patients remaining undelivered at 7 days and 14 days was similar for PPRM between 24 and 28 weeks, but it decreased significantly after that. For each gestational age, the proportion of patients remaining pregnant declined in a fashion similar to an exponential pattern. Conclusion: Median latency after PPRM is similar from 24 to 28 weeks' gestation, but it shortens with PPRM at and after 29 weeks.

Database: CINAHL

9. Fetomaternal outcome in preterm premature rupture of membrane

Author(s): Rana M.; Patra S.; Puri M.; Trivedi S.S.

Source: International Journal of Infertility and Fetal Medicine; 2014; vol. 5 (no. 1); p. 18-21

Publication Date: 2014

Publication Type(s): Article

Abstract:This prospective observational study was carried out to study the fetomaternal outcome in women with preterm premature rupture of membrane (PPROM) between 24 and 36 weeks of gestation. Materials and methods: A total of 150 pregnant women between 24 and 36 weeks gestation with PROM were subjected to detailed history and examination. Each patient was followed till her delivery and fetomaternal outcome was recorded gestation-wise between 24 and 28 weeks (n = 15), 28 and 32 weeks (n = 30), 32 and 34 weeks (n = 90), and 34 and 36 weeks (n = 15). Result: The mean latency period from membrane rupture to delivery decreased from 15 days at 24 to 28 weeks, 11 days at 28 to 32 weeks to 4.4 days at 32 to 34 weeks to 2.1 days at 34 to 36 weeks. Majority of women delivered vaginally. The rate of spontaneous labor increased as the gestational age at admission increased, the difference between rate of spontaneous labor of 67% at 28 to 32 weeks and 86% at 34 to 36 weeks was statistically significant (p = 0.001). The indications for induction of labor were intrauterine fetal death, gross oligohydramnios, and clinical chorioamnionitis. The most common complication was clinical chorioamnionitis (6%) and postpartum sepsis (6%). The perinatal outcome was favorable in majority of cases and improved with the increase in gestational age at PROM. The overall perinatal mortality was 9.3%. Conclusion: Management of PPRM involves complete evaluation of risks and benefits of conservative management. Wherever possible, the treatment should be directed toward conserving the

pregnancy with prophylactic use of antibiotics and steroids thereby reducing fetal-maternal morbidity and mortality. However, termination of pregnancy should be considered at the earliest suspicion of chorioamnionitis. Copyright © Jaypee Brothers Medical Publishers (P) Ltd.

Database: EMBASE

10. Induction of labor versus expectant management for pregnancies beyond 41 weeks.

Author(s): Daskalakis, George; Zacharakis, Dimitrios; Simou, Maria; Pappa, Penny; Detorakis, Stelios; Mesogitis, Spyros; Antsaklis, Aris

Source: The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians; Jan 2014; vol. 27 (no. 2); p. 173-176

Publication Date: Jan 2014

Publication Type(s): Comparative Study Journal Article

Abstract: OBJECTIVE To compare the outcome following labor induction at 41 + 1 weeks of gestation and after expectant management and selective induction at 42 completed weeks. METHOD A retrospective analysis of post-term pregnancies in a 2-year period. In the induction group, women at 41 + 1 weeks of gestation received 3 mg prostaglandin E2 (dinoprostone) in the posterior fornix, repeating the dose 6 h later. Women with a Bishop score >6 had artificial rupture of the membranes. In the expectant management group, women at more than 41 weeks gestation were checked every 2 days in the hospital. In case of abnormalities either in the fetal heart rate evaluation or in the biophysical profile, labor was induced. Labor was also induced in all cases that pregnancy exceeded 42 + 1 gestational weeks. RESULTS A total of 438 women who met the inclusion criteria were included in the study. In all, 211 comprised the induction group, while the expectant management group consisted of 227 women. The cesarean delivery rate in the induction group was 36.5% compared to 34.4% in the expectant management group, whereas the operative vaginal delivery rate was 11.4 and 9.2% in the two groups, respectively. The vast majority of women in the expectant management group (74%) had a spontaneous onset of labor. CONCLUSION The perinatal outcome does not differ following a policy of routine labor induction in comparison to expectant management in pregnancies beyond 41 weeks.

Database: Medline

11. Premature rupture of membranes at term in low risk women: How long to wait in the latent phase

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

Source: American Journal of Obstetrics and Gynecology; Jan 2014; vol. 210 (no. 1)

Publication Date: Jan 2014

Publication Type(s): Conference Abstract

Abstract:OBJECTIVE: How long may be the waiting time for the onset of spontaneous labor after prelabor rupture of fetal membranes at term (tPROM) remains controversial . STUDY DESIGN: 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 was focused on the onset of labor (spontaneous vs induction), maternal morbidity (caesarean section (CS) and chorioamnionitis) and neonatal morbidity (suspected infection) related to a policy of waiting the onset of spontaneous labor within 48 hours of tPROM. RESULTS: 1439 women experienced tPROM A careful clinical management shows a very low rate of clinical chorionamniotitis (2.3%) and neonatal infection rate (2.8%), even after 24 hours of tPROM. The overall incidence of CS was 4.5 %. Furthermore, a policy of waiting for the onset of spontaneous labor within 48 hours of tPROM is associated with a low rate of CS, less than induced labor.(OR=1.76;95%CI1.03-3.02; p<0.004). CONCLUSION: 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. Furthermore it may be useful to wait for spontaneous labor enhancing the patient's chance of vaginal delivery. (Table presented).

Database: EMBASE

12. Histological Chorioamnionitis Associated with Preterm Prelabour Rupture of Membranes at Kingston General Hospital: A Practice Audit

Author(s): Magee B.; Smith G.

Source: Journal of Obstetrics and Gynaecology Canada; 2013; vol. 35 (no. 12); p. 1083-1089

Publication Date: 2013

Publication Type(s): Article

Abstract:Objective: To determine the prevalence of histological chorioamnionitis associated with preterm prelabour rupture of membranes (PPROM) in women following spontaneous onset of labour, urgent delivery or planned delivery after 34 weeks' gestation. Methods: Charts of all women admitted to Kingston General Hospital with PPRM prior to 34 weeks' gestation over five years were collected. Obstetrical outcomes and histopathology reports were reviewed. Results: Two hundred forty-four women with PPRM were identified and reviewed. The majority of women (169; 69%) went into spontaneous labour and, of those, 24 (14%) had clinical chorioamnionitis and 79 (47%) had histological chorioamnionitis. Of the 45 women (18%) who required urgent delivery, 27 (60%) had clinical chorioamnionitis and 31 (69%) had histological chorioamnionitis. Only 26 of the original 244 women with PPRM (11%) were managed expectantly until 34 weeks' gestation and then had a planned delivery. The prevalence of histological chorioamnionitis in this group whose placentas were sent for histopathologic review was 24%. Overall, the clinical suspicion of chorioamnionitis was found to be specific (91%) but not sensitive (37%) for identifying chorioamnionitis on the basis of histopathology. Conclusion: Histological chorioamnionitis complicates almost one half of all cases of PPRM that occur prior to 34 weeks' gestation. Most women will progress to spontaneous labour or require urgent delivery for clinical chorioamnionitis or other complications related to ruptured membranes before reaching 34 weeks' gestation. Only a subset of women remain pregnant long enough to have labour induced, but among those the prevalence of histological chorioamnionitis is lower (24%).Copyright © 2013 Society of Obstetricians and Gynaecologists of Canada.

Database: EMBASE

13. Parameters affecting latency period in PPROM cases: a 10-year experience of a single institution.

Author(s): Dagklis, Themistoklis; Petousis, Stamatios; Margioulas-Siarkou, Chrysoula; Mavromatidis, George; Kalogiannidis, Ioannis; Prapas, Nikos; Mamopoulos, Apostolos; Rousso, David

Source: Journal of Maternal-Fetal & Neonatal Medicine; Dec 2013; vol. 26 (no. 14); p. 1455-1458

Publication Date: Dec 2013

Publication Type(s): Academic Journal

Database: CINAHL

14. Outcomes of expectantly managed preterm premature rupture of membranes before 28 weeks of gestation

Author(s): Bhaskar S.; McKenna J.; Hunter A.

Source: Archives of Disease in Childhood: Fetal and Neonatal Edition; Apr 2013; vol. 98

Publication Date: Apr 2013

Publication Type(s): Conference Abstract

Available in full text at [Fetal and Neonatal](#) - from Highwire Press

Abstract: Objectives The aim of our study was to define the maternal and fetal outcome following preterm rupture of membranes before 28 weeks of pregnancy. Study design We conducted a retrospective study at tertiary centre, Northern Ireland. The study group included 10 patients with premature rupture of membranes ranging between 14 weeks to 27+6 weeks gestation during the period January 2009-2010 December. The main outcome measured was neonate survival. Results Given the cultural background termination of pregnancy is discussed only if there is threat to maternal life. All women in our group had expectant management. We had one twin pregnancy. 3 women had history of antepartum haemorrhage in the current pregnancy. The latency between rupture of membranes to delivery varied from 1 day to 11 weeks. All women had spontaneous onset of labour. 82% of babies were delivered vaginally of which nearly 56% were vaginal breech delivery. Our take home baby rate was only 45%. There was 3 stillbirth and 3 neonatal death in the group. Unfortunately women with rupture of membranes before 20 weeks of gestation had perinatal mortality of 100%. The main cause of death was prematurity. We also discuss about steroids, newborn resuscitation methods, weight of babies, survival days in case of neonatal death, length of stay mother antenatally, postnatally and of the baby. Conclusion our results are valuable in counselling women with early preterm rupture of membranes. Pregnancy outcomes remain dismal when the fetal membrane ruptures before 20 weeks of gestation.

Database: EMBASE

15. Induction of labor versus expectant management in women with preterm prelabor rupture of membranes between 34 and 37 weeks: A randomized controlled trial

Author(s): van der Ham D.P.; Nijhuis J.G.; Willekes C.; Vijgen S.M.C.; Mol B.W.J.; van Beek J.J.; Opmeer B.C.; Mulder A.L.M.; Moonen R.; Groenewout M.; van Pampus M.G.; Mantel G.D.; Bloemenkamp K.W.M.; van Wijngaarden W.J.; Sikkema M.; Haak M.C.; Pernet P.J.M.; Porath M.; Molkenboer J.F.M.; Kuppens S.; Kwee A.; Kars M.E.; Woiski M.; Weinans M.J.N.; Wildschut H.I.J.; Akerboom B.M.C.

Source: PLoS Medicine; Apr 2012; vol. 9 (no. 4)

Publication Date: Apr 2012

Publication Type(s): Article

Available in full text at [PLoS Medicine](#) - from ProQuest

Available in full text at [PLoS Medicine](#) - from National Library of Medicine

Available in full text at [PLoS Medicine](#) - from Allen Press

Abstract:Background: At present, there is insufficient evidence to guide appropriate management of women with preterm prelabor rupture of membranes (PPROM) near term. Methods and Findings: We conducted an open-label randomized controlled trial in 60 hospitals in The Netherlands, which included non-laboring women with >24 h of PPRM between 34+0 and 37+0 wk of gestation. Participants were randomly allocated in a 1:1 ratio to induction of labor (IoL) or expectant management (EM) using block randomization. The main outcome was neonatal sepsis. Secondary outcomes included mode of delivery, respiratory distress syndrome (RDS), and chorioamnionitis. Patients and caregivers were not blinded to randomization status. We updated a prior meta-analysis on the effect of both interventions on neonatal sepsis, RDS, and cesarean section rate. From 1 January 2007 to 9 September 2009, 776 patients in 60 hospitals were eligible for the study, of which 536 patients were randomized. Four patients were excluded after randomization. We allocated 266 women (268 neonates) to IoL and 266 women (270 neonates) to EM. Neonatal sepsis occurred in seven (2.6%) newborns of women in the IoL group and in 11 (4.1%) neonates in the EM group (relative risk [RR] 0.64; 95% confidence interval [CI] 0.25 to 1.6). RDS was seen in 21 (7.8%, IoL) versus 17 neonates (6.3%, EM) (RR 1.3; 95% CI 0.67 to 2.3), and a cesarean section was performed in 36 (13%, IoL) versus 37 (14%, EM) women (RR 0.98; 95% CI 0.64 to 1.50). The risk for chorioamnionitis was reduced in the IoL group. No serious adverse events were reported. Updating an existing meta-analysis with our trial results (the only eligible trial for the update) indicated RRs of 1.06 (95% CI 0.64 to 1.76) for neonatal sepsis (eight trials, 1,230 neonates) and 1.27 (95% CI 0.98 to 1.65) for cesarean section (eight trials, 1,222 women) for IoL compared with EM. Conclusions: In women whose pregnancy is complicated by late PPRM, neither our trial nor the updated meta-analysis indicates that IoL substantially improves pregnancy outcomes compared with EM. © 2012 van der Ham et al.

Database: EMBASE

16. Factors affecting the latency period in patients with preterm premature rupture of membranes.

Author(s): Test, Gidon; Levy, Amalia; Wiznitzer, Arnon; Mazor, Moshe; Holcberg, Gershon; Zlotnik, Alexander; Sheiner, Eyal

Source: Archives of gynecology and obstetrics; Apr 2011; vol. 283 (no. 4); p. 707-710

Publication Date: Apr 2011

Publication Type(s): Journal Article

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

Abstract:OBJECTIVEThe objective of the study was to assess the factors affecting the latency period in woman with preterm premature rupture of membranes (PPROM) and evaluate morbidity associated with prolonged latency.STUDY DESIGNA population-based retrospective study including all women with PPRM (prior to 37 weeks' gestation) during the years 1998-2008 was conducted. Comparison of the latency period was conducted by the Mann-Whitney U test since the latency period was not normally distributed (most delivered in 24 h). Multivariable logistic regression model was constructed to find independent factors associated with prolonged latency period (>72 h).RESULTSDuring the study period, there were 1,399 singleton deliveries of patients with PPRM; 24.6% (345) occurred prior to 34 weeks' gestation. The duration of the latency period was significantly longer among woman with PPRM before 34 weeks as compared to PPRM after 34 weeks' gestation (5.78 vs. 2.02 days; p 35. Using a multivariable analysis, the following factors were significantly associated with latency period >72 h: lower gestational age (weeks, OR = 0.8, 95% CI 0.77-0.84; p 72 h) was significantly associated with chorioamnionitis (OR = 2.095, 95% CI 1.44-3.04; p < 0.001) and oligohydramnios (OR = 3.041, 95% CI 1.43-6.45; p = 0.004) but not with placental abruption (OR = 0.854, 95% CI 0.41-1.78; p = 0.674) or perinatal mortality (OR = 1.2, 95% CI 0.6-2.2; p = 0.556).CONCLUSIONThe duration of the latency period is inversely associated with gestational age. Nulliparity is associated with lower latency period. Prolonged latency is a significant risk factor for chorioamnionitis.

Database: Medline

17. A study of 579 pregnant women with premature rupture of membranes at term

Author(s): Li K.; Yang H.; Wang Y.; Li H.

Source: International Journal of Gynecology and Obstetrics; Jan 2011; vol. 112 (no. 1); p. 45-47

Publication Date: Jan 2011

Publication Type(s): Conference Paper

Available in full text at [Intl Jrrnl Gynecology and Obstet](#) - from John Wiley and Sons

Abstract:Objective: To determine the best management for women with premature rupture of membranes at term. Method: In 2008, 579 women admitted to Peking University First Hospital for premature rupture of membranes (PROM) at term were allocated to one of 3 groups. Group 1 (n = 292) consisted of those whose labor began spontaneously within 12 hours of PROM; group 2 (n = 234), of those whose labor did not begin within 12 hours of PROM and were induced with oxytocin; and group 3 (n = 53), of those who accepted a cesarean delivery immediately after PROM was diagnosed. The chi2 test was used to compare the rates of intrauterine and neonatal infection in these 3 groups. Results: Compared with the intrauterine and neonatal infection rates for group 1 (3.4% and 13.7%) and group 3 (1.9% and 3.8%), the corresponding rates were higher for group 2 (10.7% and 21.8%) (P < 0.05). In group 2, 76.5% of the women began labor within 24 hours of induction and 92.7% of these within 12 hours. Conclusion: In women at term, induction should be performed immediately after PROM is diagnosed, as it is likely to fail when labor does not begin

within 12 hours of oxytocin administration. © 2010 International Federation of Gynecology and Obstetrics Published by Elsevier Ireland Ltd. All rights reserved.

Database: EMBASE

18. Late Preterm Delivery in Women With Preterm Prelabour Rupture of Membranes

Author(s): Lim J.J.Y.; Allen V.M.; Scott H.M.; Allen A.C.

Source: Journal of Obstetrics and Gynaecology Canada; 2010; vol. 32 (no. 6); p. 555-560

Publication Date: 2010

Publication Type(s): Article

Abstract:Objective: To estimate maternal and neonatal outcomes in women with preterm prelabour rupture of membranes (PPROM) who delivered at 34 + 0 to 36 + 6 weeks' gestation, particularly in those who had an obstetrically indicated delivery. Methods: We conducted a population-based study of late preterm singleton births complicated by PPRM, using data from the Nova Scotia Atlee Perinatal Database from 1988 to 2006. The study cohort was categorized by type of labour (spontaneous, induced, no labour), and each group's characteristics prior to delivery, and their outcomes were compared after accounting for potential confounding variables. Results: From a total population of 164 384 pregnancies, 2618 deliveries were identified as having PPRM. Among these, 2180 (83.3%) delivered between 34 + 0 and 36 + 6 weeks' gestation. Adjusted analyses showed no differences in risk between those women entering labour spontaneously (n = 1296) and those with obstetrically indicated delivery (labour induction or Caesarean section without labour, n = 698). Additional adjusted analyses evaluating only women with obstetrically indicated delivery showed that rates of chorioamnionitis (OR 0.27; 95% CI 0.08 to 0.93), composite perinatal morbidity/mortality (OR 0.39; 95% CI 0.25 to 0.62), neonatal depression at birth (OR 0.22; 95% CI 0.06 to 0.86), and respiratory distress syndrome (OR 0.17; 95% CI 0.06 to 0.47) were significantly lower in those delivering at 36 weeks (n = 458) than in those delivering at 34 to 35 weeks (n = 240). Conclusions: This large population-based study suggests that in pregnancies complicated by PPRM rates of adverse maternal and perinatal outcomes at 36 weeks' gestational age are at least comparable to those in pregnancies delivering at 34 to 35 weeks, and these rates may be further reduced by delivery after 36 completed weeks if spontaneous labour has not occurred. Copyright © 2010 Society of Obstetricians and Gynaecologists of Canada.

Database: EMBASE

19. Planned early birth versus expectant management for women with preterm prelabour rupture of membranes prior to 37 weeks' gestation for improving pregnancy outcome.

Author(s): Buchanan, Sarah L; Crowther, Caroline A; Levett, Kate M; Middleton, Philippa; Morris, Jonathan

Source: The Cochrane database of systematic reviews; Mar 2010 (no. 3); p. CD004735

Publication Date: Mar 2010

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

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

Abstract:BACKGROUND Delivery after preterm prelabour rupture of the membranes (PPROM) may be initiated soon after PPROM or, alternatively, be delayed. It is unclear which strategy is most beneficial for mothers and their babies. OBJECTIVE To assess the effect of planned early birth compared with expectant management for pregnancies complicated with PPROM prior to 37 weeks' gestation. SEARCH STRATEGY We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (May 2009), the Cochrane Central Register of Controlled Trials (The Cochrane Library 2009, Issue 1), MEDLINE (1996 to May 2009), EMBASE (1974 to May 2009), and reference lists of trials and other review articles. SELECTION CRITERIA Randomised controlled trials comparing expectant management with early delivery for women with PPROM prior to 37 weeks' gestation. We excluded quasi randomised trials. DATA COLLECTION AND ANALYSIS Two review authors independently evaluated trials for inclusion into the review and for methodological quality. MAIN RESULTS We included seven trials (690 women) in the review. We identified no difference in the primary outcomes of neonatal sepsis (risk ratio (RR) 1.33, 95% confidence interval (CI) 0.72 to 2.47) or respiratory distress (RR 0.98, 95% CI 0.74 to 1.29). Early delivery increased the incidence of caesarean section (RR 1.51, 95% CI 1.08 to 2.10). There was no difference in the overall perinatal mortality (RR 0.98, 95% CI 0.41 to 2.36), intrauterine deaths (RR 0.26, 95% CI 0.04 to 1.52) or neonatal deaths (RR 1.59, 95% CI 0.61 to 4.16) when comparing early delivery with expectant management. There was no significant difference in measures of neonatal morbidity, including cerebroventricular haemorrhage (RR 1.90 95% CI 0.52 to 6.92), necrotising enterocolitis (RR 0.58, 95% CI 0.08 to 4.08), or duration of neonatal hospitalisation (mean difference (MD) -0.33 days, 95% CI -1.06 to 0.40 days). In assessing maternal outcomes, we found that early delivery increased endometritis (RR 2.32, 95% CI 1.33 to 4.07), but that early delivery had no effect on chorioamnionitis (RR 0.44, 95% CI 0.17 to 1.14). There was a significant reduction of early delivery on the duration of maternal hospital stay (MD -1.13 days, 95% CI -1.75 to -0.51 days). AUTHORS' CONCLUSION There is insufficient evidence to guide clinical practice on the benefits and harms of immediate delivery compared with expectant management for women with PPROM. To date all of the clinical trials have had methodological weaknesses and have been underpowered to detect meaningful measures of infant and maternal morbidity.

Database: Medline

20. A retrospective review of the management of pre-labour rupture of membranes (PROM) >36 weeks' gestation at Aberdeen maternity hospital

Author(s): Fatima F.; Mathur M.; Shetty A.

Source: Journal of Obstetrics and Gynaecology; Jan 2010; vol. 30 (no. 1); p. 87-88

Publication Date: Jan 2010

Publication Type(s): Conference Abstract

Abstract: Introduction: Approximately 8% of women have term prelabour rupture of membranes (PROM). Over 60% of these women labour spontaneously within 24 h and over 95% within 72 h following PROM. As the time interval between PROM and the onset of labour increases, so may the risk of maternal and fetal infection. Aberdeen maternity hospital (AMH) guidelines on the management of PROM >36 weeks' gestation, advises the offer of induction of labour, if labour does not start spontaneously within 24-36 h after PROM. Aims: This was a retrospective observational study looking at the management and the pregnancy outcomes with PROM >36 weeks' gestation at AMH. The main outcome measure was mode of delivery in those labouring spontaneously to those who required IOL. Methods: A total of 100 consecutive patients with PROM at >36 weeks' gestation were identified using the maternity database. The data were collected from their case notes and entered onto a specially designed datasheet for uniformity, and analysis was carried out using SPSS Version 16.0. Results: The mean age of the study population was 29.37 years (SD 6.72). The majority of the women were nulliparous (67%) and non-smokers (68%). Of the 33 parous women, 15% had a previous history of PROM at term; 21% a history of pre-term labour at 38degreeC). One woman was delivered by a caesarean section following confirmation of PROM, as she had a history of three previous caesarean sections. Two women with a history of one previous caesarean section declined a trial of vaginal delivery and opted for delivery by caesarean section. A total of 40 women (40%) laboured spontaneously within 24-48 h of PROM. Among this group, 34 women laboured within 24 h of PROM, while the remaining six laboured within 36 h. In the spontaneous labouring women, syntocinon augmentation for slow progress was indicated in 18%. Mode of delivery in these 40 women was vaginal in 67% and a caesarean section in 33%. Labour was induced in 57% (n57), of whom 29 women (51%) underwent IOL within 24 h of the PROM for indications including meconium stained liquor, maternal pyrexia, suboptimal CTG and history of Group B streptococci. Labour was induced with prostaglandins in 20 women, and oxytocin infusion in 37 women. Mode of delivery in these 57 women was by vaginal route in 74%, while 26% were delivered by a caesarean section. In total, seven babies required admission to the neonatal unit, of whom three had neonatal sepsis. In these seven women whose babies required admission to the neonatal unit, labour was induced in one for meconium stained liquor and in four for prolonged PROM, while two laboured spontaneously. Conclusions: In this small cohort, the outcomes including mode of delivery were not significantly different in those labouring spontaneously following PROM >36 weeks' gestation, and those who required IOL.

Database: EMBASE

21. Factors affecting the duration of the latency period in preterm premature rupture of membranes.

Author(s): Melamed, Nir; Hadar, Eran; Ben-Haroush, Avi; Kaplan, Boris; Yogev, Yariv

Source: The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians; Nov 2009; vol. 22 (no. 11); p. 1051-1056

Publication Date: Nov 2009

Publication Type(s): Journal Article

Abstract:OBJECTIVETo investigate the natural course of preterm premature rupture of membranes (PPROM) at 1 cm (HR = 0.65, 95% CI = 0.52-0.83), fetal growth restriction (HR = 2.94, 95% CI = 1.24-6.94) and nulliparity (HR = 1.28, 95% CI = 1.12-1.63) were significantly associated with shorter duration of the latency period.CONCLUSIONIn this study, we have identified several predictive factors for the duration of the latency period in cases of PPRM. This information may assist clinicians in risk stratification and in providing consultation for women presenting with PPRM prior to 34 weeks of gestation.

Database: Medline

22. Neonatal outcomes after elective delivery management of preterm premature rupture of the membranes before 34 weeks' gestation (DOMINOS study).

Author(s): Pasquier, Jean-Charles; Picaud, Jean-Charles; Rabilloud, Muriel; Claris, Olivier; Ecochard, René; Moret, Stephanie; Mellier, Georges

Source: European journal of obstetrics, gynecology, and reproductive biology; Mar 2009; vol. 143 (no. 1); p. 18-23

Publication Date: Mar 2009

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

Abstract:OBJECTIVEThe objective was to compare the impact of the reason for delivery (elective delivery versus spontaneous onset of labor) on neonatal outcome after preterm premature rupture of the membranes (PPROMs).STUDY DESIGNA regional prospective cohort study of all women with PPRM at between 24 and 34 weeks' gestation was conducted. We compared the effects of elective delivery (n=133), spontaneous labor (n=170), and admission for medical complications (n=169) like fetal distress, maternal hyperthermia, or placental abruption, on neonatal outcomes. Primary outcome measures were a composite of neonatal mortality and morbidity, which included periventricular leukomalacia, grade III/IV intraventricular hemorrhage, neonatal sepsis, and oxygen requirement at 36 weeks' gestation.RESULTSAmong 472 cases, mean gestational age at PPRM was 31.2+/-2.6 weeks. Neonatal outcomes improved as gestational age advanced, but a latency period of over 14 days did not improve outcomes. A logistic regression analysis showed that only elective delivery (OR 0.41, 95%CI: 0.19-0.87, P=0.02), maternal age >35 years (OR 2.13, 95%CI: 1.19-3.85, P=0.01), and gestational age at rupture remained associated with primary outcome.CONCLUSIONElective delivery in women with PPRM can be associated with decreased neonatal morbidity compared to spontaneous labor.

Database: Medline

23. Prediction of time to spontaneous onset of labour with lactate concentration in vaginal fluid in women with suspected preterm prelabour rupture of the membranes

Author(s): Wiberg-Itzel E.; Pettersson H.; Cnattingius S.; Nordstrom L.

Source: BJOG: An International Journal of Obstetrics and Gynaecology; Jan 2009; vol. 116 (no. 1); p. 62-66

Publication Date: Jan 2009

Publication Type(s): Article

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

Abstract:Objective: To assess whether lactate determination in vaginal fluid is associated with and can predict onset of labour for women with suspected preterm prelabour rupture of membranes (PPROMs). Design: Prospective observational study. Setting: Labour ward at South General Hospital, Stockholm, Sweden. Population/participants: Women with suspected PPRoms at 20-36 completed weeks of gestation (n = 81). Methods: All women underwent a speculum examination and a test for determining lactate concentration in vaginal fluid. We used logistic regression to estimate the association between lactate concentration in vaginal fluid and time to onset of labour. Main outcome measure: Time from examination to spontaneous onset of labour (cervix ≥ 4 cm). Results: The median time between examination and onset of labour was 13.6 hours for those with a high (≥ 4.5 mmol/l) lactate concentration and 1152 hours (i.e. 48 days) for those with a low (< 4.5 mmol/l) lactate concentration. For a lactate threshold of 4.5 mmol/l, the likelihood ratio for positive test (LR+) was 12.6, and LR- was 0.14 for the outcome of spontaneous onset of labour within 48 hours. Conclusions: A high lactate concentration in vaginal fluid is strongly associated with whether a woman with suspected PPRom will commence onset of labour within 48 hours. If confirmed, use of lactate ('LAC test') as a predictive test for onset of preterm labour may be an attractive tool in bedside obstetrics. © 2008 Authors.

Database: EMBASE

24. Induction of labour versus expectant management in women with preterm prelabour rupture of membranes between 34 and 37 weeks (the PPROMEXIL-trial).

Author(s): van der Ham, David P; Nijhuis, Jan G; Mol, Ben Willem J; van Beek, Johannes J; Opmeer, Brent C; Bijlenga, Denise; Groenewout, Mariette; Arabin, Birgit; Bloemenkamp, Kitty W M; van Wijngaarden, Wim J; Wouters, Maurice G A J; Pernet, Paula J M; Porath, Martina M; Molkenboer, Jan F M; Derks, Jan B; Kars, Michael M; Scheepers, Hubertina C J; Weinans, Martin J N; Woiski, Mallory D; Wildschut, Hajo I J; Willekes, Christine

Source: BMC pregnancy and childbirth; Jul 2007; vol. 7 ; p. 11

Publication Date: Jul 2007

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

Available in full text at [BMC Pregnancy and Childbirth](#) - from BioMed Central

Available in full text at [BMC Pregnancy and Childbirth](#) - from National Library of Medicine

Abstract:BACKGROUNDPreterm prelabour rupture of the membranes (PPROM) is an important clinical problem and a dilemma for the gynaecologist. On the one hand, awaiting spontaneous labour increases the probability of infectious disease for both mother and child, whereas on the other hand induction of labour leads to preterm birth with an increase in neonatal morbidity (e.g., respiratory distress syndrome (RDS)) and a possible rise in the number of instrumental deliveries.METHODS/DESIGNWe aim to determine the effectiveness and cost-effectiveness of

immediate delivery after PPROM in near term gestation compared to expectant management. Pregnant women with preterm prelabour rupture of the membranes at a gestational age from 34+0 weeks until 37+0 weeks will be included in a multicentre prospective randomised controlled trial. We will compare early delivery with expectant monitoring. The primary outcome of this study is neonatal sepsis. Secondary outcome measures are maternal morbidity (chorioamnionitis, puerperal sepsis) and neonatal disease, instrumental delivery rate, maternal quality of life, maternal preferences and costs. We anticipate that a reduction of neonatal infection from 7.5% to 2.5% after induction will outweigh an increase in RDS and additional costs due to admission of the child due to prematurity. Under these assumptions, we aim to randomly allocate 520 women to two groups of 260 women each. Analysis will be by intention to treat. Additionally a cost-effectiveness analysis will be performed to evaluate if the cost related to early delivery will outweigh those of expectant management. Long term outcomes will be evaluated using modelling.

DISCUSSION This trial will provide evidence as to whether induction of labour after preterm prelabour rupture of membranes is an effective and cost-effective strategy to reduce the risk of neonatal sepsis.

CONTROLLED CLINICAL TRIAL REGISTER: ISRCTN29313500.

Database: Medline

25. Preterm prelabour rupture of the membranes before 28 weeks: better than feared outcome of expectant management in Africa.

Author(s): Stewart, Chantal J M; Tregoning, Shaun K; Moller, G; Wainwright, H

Source: European journal of obstetrics, gynecology, and reproductive biology; Jun 2006; vol. 126 (no. 2); p. 186-192

Publication Date: Jun 2006

Publication Type(s): Journal Article

Abstract: **OBJECTIVE** To document the prognosis after conservative management of patients with membrane rupture at gestations less than 28 weeks. **STUDY DESIGN** Prospective observational study of 78 women with confirmed membrane rupture at less than 28 weeks gestation, managed conservatively. Antibiotics were given from the time of membrane rupture till delivery. Patients were delivered if clinical infection supervened, there was fetal compromise, spontaneous labour ensued or if the pregnancy continued to 34 completed weeks gestation. **RESULTS** The mean gestational age at membrane rupture was 23.3+/-3.17 weeks (16.5-27.8) and the median 24 weeks. Mean latency period was 24.1+/-29.1 days (1.5-154) with a median of 12.5 days. Eight women (10%) delivered between 24 and 48 h, 25 (32%) within 7 days and 55 (70%) within 1 month. Of note is that 23 patients (30%) had latency periods of greater than 1 month. The mean gestational age at delivery was 26.7+/-3.92 weeks. Overall of the 78 women there were 81 fetuses delivered, of which 35 (43%) survived. Survival was related to latency period, birth weight and gestational age at delivery. Sixteen women (20%) developed chorioamnionitis. There was no increase in the incidence of clinical infection with increasing latency period. Compression limb abnormalities occurred in 17% of neonates and lung hypoplasia in 18%. **CONCLUSION** Conservative management of patients with very preterm prelabour membrane rupture offers a survival rate of at least 40% with no serious complications in a study of 78 women.

Database: Medline

26. Expectant management in spontaneous preterm premature rupture of membranes between 14 and 24 weeks' gestation.

Author(s): Falk, Sandy J; Campbell, Laura J; Lee-Parritz, Aviva; Cohen, Amy P; Ecker, Jeffrey; Wilkins-Haug, Louise; Lieberman, Ellice

Source: Journal of perinatology : official journal of the California Perinatal Association; Oct 2004; vol. 24 (no. 10); p. 611-616

Publication Date: Oct 2004

Publication Type(s): Journal Article

Available in full text at [Journal of Perinatology](#) - from Nature Publishing Group

Available in full text at [Journal of Perinatology](#) - from ProQuest

Abstract:OBJECTIVETo examine maternal and neonatal outcomes in expectant management of spontaneous preterm premature rupture of membranes (PPROM) before 24 weeks.STUDY DESIGNPatients presenting with spontaneous PPRM from 14 to 23 completed weeks' gestation between January 1, 1995 and December 31, 1999 were reviewed. A total of 108 pregnancies were evaluated; 57 patients elected expectant management.RESULTSMedian latency from rupture of membranes (ROM) to delivery was 6 days; the overall survival rate was 26.3%. In ROM <20 weeks, a twin and a triplet pregnancy with loss of the presenting fetuses yielded the only survivors. In patients with ROM from 20 to 21 and 22 to 23 weeks, survival rates were 2/16 (12.5%) and 11/20 (55.0%), respectively. In all, 18/57 (31.6%) of patients developed chorioamnionitis. There was no maternal sepsis or death. There were three cases of pulmonary hypoplasia, all in patients with ROM <20 weeks.CONCLUSIONSNeonatal survival in spontaneous PPRM before 20 weeks is rare, irrespective of latency from ROM to delivery. When PPRM occurs from 20 to 24 weeks, survival improves with increasing gestational age at ROM and at delivery.

Database: Medline

27. 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:OBJECTIVESTo 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 DESIGNA retrospective case control series of women at > or =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).RESULTSThe 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). **CONCLUSION** In 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

28. 24 hour rhythm in the timing of pre-labour spontaneous rupture of membranes at term.

Author(s): Ngwenya, S; Lindow, S W

Source: European journal of obstetrics, gynecology, and reproductive biology; Feb 2004; vol. 112 (no. 2); p. 151-153

Publication Date: Feb 2004

Publication Type(s): Journal Article

Abstract: **OBJECTIVE** To study the timing of pre-labour spontaneous rupture of membranes (SRM) in term pregnancies. **DESIGN** Prospective cohort. **SETTING** A maternity hospital in the United Kingdom. **SAMPLE** Women who were more than 37 weeks gestation with confirmed spontaneous rupture of membranes and not in labour after 4 h. **METHODS** Women who were admitted into labour ward with a diagnosis of spontaneous rupture of membranes after 37 weeks of gestation were included. The women's demographic details were recorded and inquiries about whether they had sexual intercourse in the preceding 12 h. The final outcome of their pregnancy was recorded and analysed. **MAIN OUTCOME MEASURES** (1) The exact time of spontaneous rupture of membranes, (2) the time of onset of spontaneous labour, (3) delivery details. **RESULTS** One hundred and ninety-six women were studied. A 24 h rhythm in the timing of spontaneous rupture of membranes was found with 33.2% occurring between 00:00 and 04:00 h. When contractions representing the onset of labour occurred there was no diurnal rhythm to the timing of onset of contractions. **CONCLUSIONS** There is a 24 h rhythm in the timing of spontaneous rupture of membranes in term gestations. The physiological reasons for this rhythm are not understood at the present time.

Database: Medline

29. Expectant management of midtrimester premature rupture of membranes: a plea for limits.

Author(s): Grisaru-Granovsky S; Eitan R; Kaplan M; Samueloff A

Source: Journal of Perinatology; Apr 2003; vol. 23 (no. 3); p. 235-239

Publication Date: Apr 2003

Publication Type(s): Academic Journal

Available in full text at [Journal of Perinatology](#) - from Nature Publishing Group

Abstract: **OBJECTIVE:** Our aim was to assess neonatal and maternal complications of the expectant management of pregnancies with preterm premature rupture of membranes (P-PROM) prior to 24 weeks of gestation and to delineate a patient consult strategy. **STUDY DESIGN:** We included all consecutive cases of early midtrimester P-PROM (16-24 weeks gestation). Information coded in our perinatal database was analyzed. Descriptive statistics, Student's t-test and Mann-Whitney test, and a logistic regression model were built accordingly. **RESULTS:** A total of 28 women presented with P-PROM at 16-24 weeks (mean 22.7+/-1.0 weeks). Two patients declined conservative management and one was lost to follow-up (10.7%). In all, 25 (89.2%) were followed until the onset of labor or development of chorioamnionitis. Overall, 8/25 (32%) Of the neonates survived. Pulmonary hypoplasia accounted for three deaths (3/25, 12%). Of 10 pregnancies with P-PROM before 22

weeks gestation, two (20%) neonates survived. The amount of amniotic fluid and gestational age at the time of diagnosis were crucial independent factors determining overall survival. Pulmonary hypoplasia (12%) and skeletal deformities (0%) were infrequent. The 21-day mean maternal antenatal hospital stay was further complicated by a high cesarean rate delivery (33.7%) and by postpartum infectious morbidity (32%). **CONCLUSION:** In cases of early midtrimester P-PROM (<24 weeks) expectantly managed, neonatal survival is positively associated with the amount of amniotic fluid present and with the gestational age at the time of diagnosis. The mothers are at increased risk of prolonged antenatal hospitalization, cesarean delivery, preterm birth, and postpartum infection. In very early midtrimester P-PROM (<22 weeks), the maternal complication rate outweighs the poor neonatal outcome and expectant management should be reconsidered.

Database: CINAHL

30. Prelabour rupture of the membranes at term--no advantage of delaying induction for 24 hours.

Author(s): Akyol, D; Mungan, T; Unsal, A; Yüksel, K

Source: The Australian & New Zealand journal of obstetrics & gynaecology; Aug 1999; vol. 39 (no. 3); p. 291-295

Publication Date: Aug 1999

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

Available in full text at [Australian and New Zealand Journal of Obstetrics and Gynaecology](#) - from John Wiley and Sons

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Australian and New Zealand Journal of Obstetrics and Gynaecology

Abstract: We performed a prospective randomized study to compare maternal and fetal outcomes in pregnancies with prelabour rupture of the membranes (PROM) at term with early induction of labour or expectant management, 126 women with singleton pregnancy, cephalic presentation and gestational duration ≥ 37 weeks, were randomized either to immediate induction of labour with oxytocin (Group 1) (n=52), or conservative management (Group 2) (n=74). Women who constituted Group 2 were divided into 2 groups. The first group (Group 2A) (n=25) included women in whom spontaneous labour did not begin after a waiting period of 24 hours, in which case labour was induced with oxytocin i.e. expectant management. The second group consisted of women (Group 2B) (n=49) in whom labour began spontaneously within 24 hours. The base Caesarean section rate was significantly higher in Group 2 (28.4%) ($p < 0.05$). The rates of Caesarean section in the Groups 1-2A-2B were 19.2%, 60%, and 12.2%, respectively for nulliparous and parous women together. The rate of fetal distress was significantly higher in Group 2 ($p < 0.05$). For determining maternal outcomes, the other parameters such as clinical chorioamnionitis, fever before or during labour, receiving antibiotics before or during labour, postpartum fever, analgesia, anaesthesia did not differ in Groups 1 and 2. Women in Group 1 went into active labour sooner, had fewer digital vaginal examinations, had a shorter interval between membrane rupture and delivery, and spent less time in the hospital before delivery than those in Group 2 ($p < 0.05$). Babies in Group 2 were more likely to receive antibiotics, and more likely to stay in an intensive care nursery for more than 24 hours, and more likely to receive ventilation after initial resuscitation than those babies in Group 1. For developing apnoea and hypotonia, there was no significant difference between Groups 1 and 2. However, for babies in Group 2A there was a significant difference. We conclude that immediate induction of labour with oxytocin does not increase the risk of Caesarean section, compared with a practice of expectant management. Women at term with prelabour rupture of the membranes should therefore be reassured that immediate induction with oxytocin currently appears to be the best policy with respect to maternal and neonatal morbidity.

Database: Medline

31. Influence of gestational age on the time from spontaneous rupture of the chorioamniotic membranes to the onset of labor.

Author(s): Savitz, D A; Ananth, C V; Luther, E R; Thorp, J M

Source: American journal of perinatology; Mar 1997; vol. 14 (no. 3); p. 129-133

Publication Date: Mar 1997

Publication Type(s): Journal Article

Abstract:Our goal was to assess the influence of gestational age on the timing of labor onset following spontaneous rupture of the chorioamniotic membranes. The 24,831 patients in the Nova Scotia Atlee perinatal database from 1986 to 1992 whose membranes ruptured prior to labor onset and had live births were analyzed using life-table analysis methods. The probability of labor onset at specified intervals following rupture was markedly lower when rupture occurred earlier in gestation. Pregnancies of < 33 weeks' gestation were less than half as likely as term pregnancies to proceed to labor within 24 hours and pregnancies of 33-36 weeks' gestation were 50-75% as likely as term pregnancies to progress within that period. These data provide clear evidence that the earlier in gestation the rupture occurs, the less likely labor onset is within specified time periods. This pattern supports the contention that preterm rupture of membranes is etiologically distinct from preterm labor.

Database: Medline

32. 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

33. 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

34. Controversies: prelabor rupture of the membranes at term: the case for expectant management.

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

Source: Journal of perinatal medicine; 1996; vol. 24 (no. 6); p. 563-572

Publication Date: 1996

Publication Type(s): Journal Article Review

Abstract:Review of the controlled comparisons between induction of labor and expectant care after prelabor rupture of the membranes (PROM) at term indicates that they are not unhelpful for deciding which of the two options is best. This is, first, because there is a large potential for bias in the studies reported thus far. Second, the trials are rather heterogeneous and they are comparisons more between early and late induction than between induction and expectant care. Third, it is difficult to weigh an increased risk of operative delivery with the induction policy against an apparently clear, but almost certainly biased, reduction of neonatal infection. With expectant care about 70% of women will give birth within 24 hours and 85% within 48 hours. The majority of these women will derive little, if any, benefit from induction and a routine policy of induction of labor after PROM cannot be justified on the basis of the data that are available.

Database: Medline

35. A randomised trial of two expectant managements of prelabour rupture of the membranes at 34 to 42 weeks.

Author(s): Ladfors, L; Mattsson, L A; Eriksson, M; Fall, O

Source: British journal of obstetrics and gynaecology; Aug 1996; vol. 103 (no. 8); p. 755-762

Publication Date: Aug 1996

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

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from British Journal of Obstetrics and Gynaecology (BJOG)

Abstract:OBJECTIVETo compare obstetric and perinatal outcome between two different expectant managements in women with prelabour rupture of the membranes (PROM).DESIGNA randomised study.PARTICIPANTSOne thousand three hundred and eighty-five women with rupture of the membranes at 34 to 42 weeks without contractions.INTERVENTIONSWomen without contractions 2 h after admission were randomised to early induction the following morning after PROM (early induction group) or induction two days later (late induction group). Women with contractions starting within 2 h after admission were included in the calculations as a short latency group. Digital examinations of the cervix were avoided until onset of active labour. Labour was induced with oxytocin in both groups if no spontaneous contractions occurred or if chorioamnionitis or fetal distress was detected.MAIN OUTCOME MEASURESThe frequency of spontaneous deliveries, operative deliveries, maternal and neonatal infections.RESULTSIn nulliparous women, a higher rate of spontaneous deliveries was found in the late induction group (89%) compared with the early induction group (81%) ($P < 0.05$). The ventouse extraction rate was 7% and 14% respectively ($P < 0.05$). A low (2-4%) caesarean section rate was recorded and did not differ between the groups. Endometritis was detected in six women after delivery. Sixty-one children were treated with antibiotics, and no difference could be detected between the groups.CONCLUSIONSA higher rate of spontaneous deliveries was found among nulliparous women with prolonged latency as compared with brief latency prior to induction. A protocol of no digital examination before labour was associated with infrequent maternal and fetal morbidity, regardless of latency.

Database: Medline

36. 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 print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from New England Journal of Medicine

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:BACKGROUNDAs 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.METHODSWe 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

37. 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

38. Expectant management in nulliparous term pregnant women with premature rupture of membranes and an unripe cervix

Author(s): Granstrom L.; Hammarstrom M.; Hjertberg R.; Moberger B.; Berg A.; Nordlander E.

Source: Journal of Obstetrics and Gynaecology; 1995; vol. 15 (no. 6); p. 366-372

Publication Date: 1995

Publication Type(s): Article

Abstract:In total 181 nulliparous term pregnant women with premature rupture of membranes, no uterine contractions and an unripe cervix were allocated at random to labour induction after 12 hours (Group A) or 24 hours (Group B). As long as the cervix remained unfavourable (cervical score 2 was applied vaginally in the posterior fornix every 12 hours starting 12 or 24 hours after premature rupture of membranes. In Group A, 72 (75 per cent) required induction of labour while 46 (50 per cent) in Group B started their labour spontaneously (P 2 was more frequent in Group A compared with Group B ($P < 0.05$). The number of instrumental deliveries did not differ. Maternal complications and the neonatal infectious morbidity was the same in the two groups. We conclude that expectant management for 24 hours results in a high incidence of spontaneous ripening of the cervix combined with spontaneous onset of labour with no disadvantage with respect to maternal or fetal infectious morbidity.

Database: EMBASE

39. 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; May 1995; vol. 85 (no. 5); p. 766-768

Publication Date: May 1995

Publication Type(s): Comparative Study 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:**OBJECTIVE**To compare 12-hour and 72-hour expectant management of premature rupture of membranes (PROM) in singleton term pregnancies.**METHODS**In a prospective, nonrandomized study, 566 low-risk women with singleton term pregnancies presenting with PROM were assigned to either 12-hour or 72-hour expectant management. Patients who had not entered labor 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 PROM are comparable regarding infectious complications and pregnancy outcome. However, the longer wait prolongs the interval to delivery and increases hospitalization costs.

Database: Medline

40. Management of premature rupture of membranes at term.

Author(s): Zlatnik, F J

Source: Obstetrics and gynecology clinics of North America; Jun 1992; vol. 19 (no. 2); p. 353-364

Publication Date: Jun 1992

Publication Type(s): Journal Article Review

Abstract:Although prelabor rupture of membranes at term is common, in most cases, the spontaneous onset of labor relieves the obstetrician of the need for making management decisions. The standard practice in the United States has been to induce labor with intravenous oxytocin in that minority of patients who fail to labor spontaneously. Controlled trials suggest that this practice is associated with higher rates of both chorioamnionitis and the need for cesarean delivery than is expectancy. Expectancy, however, has not been demonstrated to be safer for the perinate.

Database: Medline

41. Management of term patients with premature rupture of membranes and an unfavorable cervix

Author(s): Guise J.M.; Duff P.; Christian J.S.

Source: American Journal of Perinatology; 1992; vol. 9 (no. 1); p. 56-60

Publication Date: 1992

Publication Type(s): Article

Abstract:The purpose of this prospective investigation was to evaluate a protocol for management of term patients with premature rupture of membranes (PROM) and a cervix unfavorable for induction of labor (Bishop score 4 or less). Patients initially were observed for 24 to 36 hours for the spontaneous onset of labor. If spontaneous contractions did not commence, labor was induced with oxytocin. Patients subsequently were divided into three groups: 44 who had spontaneous labor, 29 who had spontaneous labor but required oxytocin augmentation, and 39 women who had oxytocin induction. Patients who entered labor spontaneously had a significantly shorter mean latent period between rupture of membranes and onset of labor (16.0 versus 26.8 and 40.7 hours), shorter mean duration of labor (7.6 versus 12.1 and 13.1 hours), and shorter mean duration of rupture of membranes (23.6 versus 39.0 and 53.8 hours). These women also had a significant decrease in the frequency of chorioamnionitis (7 versus 14 and 33%), and their infants had fewer evaluations for sepsis (25.0 versus 34.5 and 53.8%). We conclude that term patients with PROM and an unfavorable cervix who require oxytocin augmentation or induction of labor are at increased risk for intrapartum and neonatal infection compared with those who progress through labor spontaneously.

Database: EMBASE

42. 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%; $\chi^2 = 2.3$, $p > 0.05$). A slightly increased rate of neonatal infections was seen in the latter group (0.7 vs. 4.3 %; $\chi^2 = 3.2$, $p < 0.05$). 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

43. A comparison of early and delayed induction of labor with spontaneous rupture of membranes at term.

Author(s): Wagner, M V; Chin, V P; Peters, C J; Drexler, B; Newman, L A

Source: Obstetrics and gynecology; Jul 1989; vol. 74 (no. 1); p. 93-97

Publication Date: Jul 1989

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

Abstract:The management of women with spontaneous rupture of membranes at term in the absence of labor and with a cervix unfavorable for induction of labor is controversial. In this randomized study of 182 patients, we report the effects of delayed versus early induction of labor on maternal and neonatal outcome. Qualifying patients not in labor at 6 hours after spontaneous rupture of membranes were randomized to either immediate oxytocin induction (86 women) or expectant management with oxytocin induction at 24 hours if labor had not occurred spontaneously (96 women). The cesarean section rate did not differ between the two groups. Women in the delayed group had significantly longer hospitalization (P less than .003), and their infants were significantly more likely to receive antibiotics ($P = .006$). Infectious morbidity (positive cultures or x-ray-documented pneumonia) occurred in five of the neonates in the delayed group, all of whose mothers had an initial digital cervical examination, but in none of the neonates in the early group, a difference that did not reach statistical significance ($P = .061$). Five (28%) of 18 infants from the delayed group whose mothers had received an initial digital cervical examination became infected, compared with none of the 78 infants from the delayed group whose mothers did not have digital examinations (P less than .001). We conclude that there is no advantage to delaying induction of labor when women present at term with spontaneous rupture of membranes.

Database: Medline

44. Expectant management of rupture of membranes at term.

Author(s): Morales, W J; Lazar, A J

Source: Southern medical journal; Aug 1986; vol. 79 (no. 8); p. 955-958

Publication Date: Aug 1986

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

Abstract:We conducted a prospective randomized study involving 317 patients with term gestations (greater than 36 weeks) and premature rupture of membranes (PROM). Eighty-five percent of the 167 patients managed conservatively began labor within 48 hours. The cesarean section rate in this group was 7% as opposed to 21% in the group managed by oxytocin induction. There were no neonatal infections, and the maternal intrauterine infection rate was lower in the group managed expectantly, 4% vs 12%. There was no difference in the average time of hospitalization for the two groups. Conservative management of patients with PROM at term will significantly reduce the incidence of cesarean section without placing the mother or infant at a higher risk of infection.

Database: Medline

45. 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.

Source: American Journal of Obstetrics and Gynecology; 1984; vol. 150 (no. 8); p. 947-951

Publication Date: 1984

Publication Type(s): 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 ($p < 0.01$). Ninety-four percent of those in spontaneous labor were delivered vaginally compared to 73% of the induced group ($p < 0.01$). 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: EMBASE

Strategy 216097

#	Database	Search term	Results
1	Medline	(rupture* ADJ3 membrane*).ti,ab	10263
2	Medline	(spontaneous*).ti,ab	324749
3	Medline	(1 AND 2)	1453
4	Medline	((labor OR labour) ADJ2 onset*).ti,ab	2848
5	Medline	exp "LABOR ONSET"/	3632
6	Medline	(4 OR 5)	6107
7	Medline	(3 AND 6)	196
8	Medline	exp "FETAL MEMBRANES, PREMATURE RUPTURE"/	6404
9	Medline	(6 AND 8)	264
10	Medline	(7 OR 9)	378
11	Medline	(expectant*).ti,ab	5586
12	Medline	(3 AND 11)	68
13	Medline	exp "TIME FACTORS"/	1087067
14	Medline	(7 AND 13)	39
15	EMBASE	exp "PREMATURE FETUS MEMBRANE RUPTURE"/	8022
16	EMBASE	((labor OR labour) ADJ2 onset*).ti,ab	3431
17	EMBASE	exp "LABOR ONSET"/	1931

18	EMBASE	(rupture* ADJ2 membrane*).ti,ab	10093
19	EMBASE	(15 OR 18)	14131
20	EMBASE	(spontaneous*).ti,ab	399722
21	EMBASE	(16 OR 17)	4184
22	EMBASE	(19 AND 20 AND 21)	207
23	EMBASE	((labour* OR labor*) ADJ3 spontaneous*).ti,ab	4742
24	EMBASE	(19 AND 23)	631
25	EMBASE	**"PREMATURE FETUS MEMBRANE RUPTURE"/	3142
26	EMBASE	(23 AND 25)	121
27	EMBASE	(expectant*).ti,ab	7535
28	EMBASE	(21 AND 25 AND 27)	17
29	EMBASE	(15 AND 21 AND 27)	19
30	EMBASE	exp "TIME FACTOR"/	10936
31	EMBASE	(latent OR latency).ti,ab	160257
32	EMBASE	(24 AND 31)	32
33	EMBASE	**"LABOR ONSET"/	349
34	EMBASE	(25 AND 33)	8
35	Medline	(latent OR latency).ti,ab	130030
36	Medline	(1 OR 8)	12980
37	Medline	(6 AND 35 AND 36)	44
38	CINAHL	(rupture* ADJ3 membrane*).ti,ab	1386

39	CINAHL	exp "FETAL MEMBRANES, PREMATURE RUPTURE"/	1489
40	CINAHL	(38 OR 39)	2203
41	CINAHL	((labor OR labour) ADJ2 onset*).ti,ab	358
42	CINAHL	(40 AND 41)	58
43	CINAHL	(spontaneous* ADJ4 (labor* OR labour*)).ti,ab	625
44	CINAHL	(40 AND 43)	146
45	CINAHL	(expectant*).ti,ab	1297
46	CINAHL	(40 AND 45)	81
47	CINAHL	(latent OR latency).ti,ab	9144
48	CINAHL	(40 AND 47)	108
49	CINAHL	(41 AND 48)	4
50	CINAHL	exp "TIME FACTORS"/	77514
51	CINAHL	(48 AND 50)	20