

## MANAGEMENT OF PRELABOUR SPONTANEOUS RUPTURE OF THE MEMBRANES (SROM)

### AND PRE-TERM LABOUR

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<b>Documents to read alongside this Policy , Procedure etc (delete as necessary)</b>	
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## **MANAGEMENT OF PRELABOUR SPONTANEOUS RUPTURE OF THE MEMBRANES (SROM)**

### **Pregnancy less than 37 completed weeks**

- A. With evidence of infection - discuss delivery with Senior Obstetrician.
- B. Without evidence of infection - should be managed conservatively.
  - 1. On admission:-
    - (a) Sterile Speculum examination to confirm diagnosis if in doubt.
    - (b) HVS or guarded swab to obtain sample of liquor for gram stain and C&S
    - (c) 4 hourly temperature, pulse and pad checks
    - (d) Daily CTG and uterine palpation
    - (e) Consider twice weekly WCC
    - (f) Women can be allowed home after review by a senior obstetrician. Plan for a follow-up in ANC/ MAU and regular monitoring should be clearly documented in the notes prior to discharge. Women with non-cephalic presentation should be treated as in-patient.
  - 2. Delivery should be considered (by a senior obstetrician) after 37 weeks (if still undelivered).
  - 3. Steroids should be given prior to 34 weeks as per guideline.
  - 4. Antibiotics (erythromycin) should be considered (250mg erythromycin 4 times per day for 10 days)

### **MANGEMENT OF PRE-LABOUR RUPTURE AT TERM $\geq$ 37/40 gestation**

Speculum examination is required only if the diagnosis of SROM is in doubt. Speculum examination can be carried out by an experienced midwife or doctor. Women should be managed conservatively for at least 24 hours provided:

- (1) Liquor draining is clear
- (2) Fetal heart rate is normal
- (3) No vaginal bleeding
- (4) Singleton, cephalic presentation

- (5) No evidence of infection
- (6) Give information leaflet on IOL and Pre-Labour SROM

(If in doubt, discuss with senior obstetric staff)

**Induction of labour** should be planned 24 hours after SROM  
Women should be allowed home meanwhile if all well.

### **MANAGEMENT OF WOMEN WITH PRE-LABOUR SROM IN THE COMMUNITY**

The community midwife responsible for the woman should visit the woman to confirm SROM, check presentation, fetal heart and rule out any risk factors. In absence of any complication the woman can stay home and should be booked for IOL after 24 hrs.

#### **The following criteria should apply:**

- (1). Low risk women with no adverse features to pregnancy can stay at home
- (2) Ensure normal fetal heart rate
- (3) If the women develops a temperature or feels unwell she should return immediately.
- (4) Arrangements made for I.O.L. after 24 hours
- (5) Contact telephone numbers given to the women.
- (6) Advice woman to contact Community midwife/MAU if concerned about fetal movements
- (7) If labour becomes established, and hospital delivery is planned, the woman should return to hospital. If labour becomes established within 24 hours of SROM and if under MLC, to contact MLU
- (8) Give information leaflets on IOL and Pre-labour SROM

#### Reference:

- 1. Oracle study: Antibiotics for preterm premature rupture of membranes. Kenyon S., et al Cochrane collaboration: Cochrane library, Issue 1, Oxford: Update software 2001.
- 2. NICE Intrapartum care September 2007

## **MANAGEMENT OF PRE-TERM LABOUR**

Women with threatened preterm labour (24 – 36 weeks) should have an assessment of fetal well being by CTG, a speculum examination of the cervix, and a **fetal fibronectin** swab taken. Urinalysis should also be performed to screen for UTI.

A negative fetal fibronectin (quantitative level <50) is extremely predictive that preterm birth is unlikely to occur. Positive tests (level >50) should be interpreted depending on the clinical picture.

Fetal fibronectin <50

If the os is closed, in the absence of other exacerbating factors (e.g. a UTI) then reassure and discharge home.

Fetal fibronectin >50 and clinical picture suggestive of preterm labour

- Admit
- Give steroids
- Tocolysis with nifedipine
- If <30 weeks gestation and labour and delivery is likely, consider giving Magnesium Sulphate for fetal neuroprotection.

Fibronectin	% who will deliver within 2 weeks	
0 - 9	1.8	
10 - 49	1.6	
50 – 199	7.7	
200 – 499	29	
>500	46	

**Antenatal corticosteroids** promote fetal lung maturity and are associated with a decrease in neonatal death and intraventricular haemorrhage. Steroids are recommended under 34 weeks of gestation and are given as Betamethasone 12mg IM, two doses 24 hours apart. If Betamethasone is not available, Dexamethasone is given 6mg IM, for four doses, 12 hours apart.

All women in threatened preterm labour who are less than 34 weeks pregnant and who have no fetal or maternal contraindication to prolongation of the pregnancy should be considered for **tocolytic therapy with Nifedipine**. It is reasonable to not to use tocolytic drugs, as there is no clear evidence that they improve outcome. However, tocolysis should be given if the few days gained would be put to good use, such as completing a course of steroids, or in-utero transfer.

First line treatment is currently nifedipine administered as follows:  
Nifedipine Given orally 10mg on four occasions 20 minutes apart  
i.e.: 10 mg orally at 0, 20, 40 and 60 minutes  
OR given until contractions stop (maximum of 4 doses).  
Repeat oral Nifedipine tablet 20 mgs, 4 hours after first administration and continue 20 mg oral Nifedipine 8 hourly for 48 hours

**Alternate Tocolytic: Atosiban** is used if Nifedipine is contraindicated (severe maternal cardiopulmonary compromise), or intolerance to Nifedipine

Two vial sizes are available (0.9ml for initial bolus and 5ml vials for preparation of infusion)

Atosiban is administered as follows:

1. Bolus dose of one 0.9ml vial injection over 1 minute (one vial = 6.75mg)
2. Maintenance dose is given in the form of i.v. infusion with 5ml vials in 100ml infusion. Any of the following solution can be used ;  
0.9% w/v normal sodium chloride solution  
Ringer's lactate solution  
5%w/v dextrose solution

Preparation of intravenous infusion:

Remove 10ml of dilution solution from 100ml infusion bag and discard. Replace with 10ml Atisoban (two vials of 5mls each) to make 100ml of infusion solution.

Set up an i.v. infusion which runs initially at 24ml/hour (18mg/hour) for 3 hours.

Reduces to 8ml/hour (6mg/hour) for up to a further 45 hours (Total duration no more than 48 hours)

Replacement bags should be prepared as required so that infusion can be continued uninterrupted. If bags of different volume are used, the dilution calculation should be adjusted accordingly to achieve the same concentration. Use infusions within 24 hours after preparation.

## **Magnesium Sulphate**

Studies of infants born to mothers given magnesium sulphate to prevent eclamptic seizures or as tocolysis show a reduction in rates of cystic periventricular leucomalacia (PVL) and cerebral palsy. In those babies born preterm and exposed to magnesium sulphate<sup>8</sup> the odds ratio for cerebral palsy was 0.14 (95% CI 0.05–0.51).<sup>9</sup> Although the exact mechanism of action of magnesium as a neuroprotective agent is unknown, it has a number of biologically plausible actions which may contribute to a protective effect on the preterm neonatal brain.

Magnesium sulphate given to mothers shortly before delivery reduces the risk of cerebral palsy and protects gross motor function in those infants born preterm. The effect may be greatest at early gestations and is not associated with adverse long-term fetal or maternal outcome.<sup>17</sup> Women should be advised of an increase in minor adverse effects associated with the medication.

Prescribe Magnesium Sulphate 4g IV over 20minutes then 1g/hr for 24 hours

## **Rescue Cerclage**

Rescue cerclage may be considered in women <24 weeks gestation with no signs of active labour and with cervical dilatation < 4cm, where the membranes have not prolapsed beyond the cervical os. Know causes of preterm labour including infection (both vaginal and urinary), and placental abruption need to be excluded. A consultant should be involved in making the decision. A rescue cerclage may delay delivery by a further 5 weeks, and is associated with a two-fold reduction in delivery before 34 weeks.

## References:

- RCOG Green Top Guideline No 1(B), 2002
- RCOG green Top Guideline No7 2004
- Preterm Labour. Dr DC Howe and Prof Calder. PACE review 98/08 RCOG
- Glock & Morales AMT O & G, Oct '93 Vol 169(4) P960-964
- and safety of the oxytocin antagonist Atosiban versus beta-adrenergic agonists in the treatment of preterm labour. BJOG Feb 2001, Vol 108, p133-142
- RCOG Green-top Guideline No. 60 – Cervical Cerclage
- Magnesium Sulphate to Prevent Cerebral Palsy Following Preterm Birth
- Office for National Statistics (2007) Preterm Births, Preterm Births
- Abbott D et al. Evaluation of Quantitative Fetal Flbronectin Test for Spontaneous Preterm Labour in Symptomatic Women. Am J Obstet Gynecol 2012;208
- Magnesium Sulphate to Prevent Cerebral Palsy following Preterm Birth – Scientific Impact Paper 29

## MANAGEMENT OF VERY PRE-TERM LABOUR

### This is an emergency and requires:

- Experienced staff to be involved – this is a multidisciplinary matter
- Good communication with parents, and between professionals
- Documentation of discussion with parents
- Appropriate counselling based on recent data (see tables 1 & 2)
- Every case of spontaneous prem-labour is a unique situation and treated individually
- The parents' hopes and expectations need to be explored with honesty and compassion in a realistic way, drawing upon the available evidence. Communication and agreed plans must be documented in full and signed legibly. These plans may need to be revised frequently.
- Prior agreed management plan for the birth, particularly if <25/40 gestation, which should be fully documented
- There should be an expectation of resuscitation at 24 weeks and beyond.

### Threatened preterm labour

<20 weeks → Gynae ward

>20 weeks → Delivery suite

→ Obstetrician to assess →

✧ ? labour → if not → antenatal ward

if yes → ✧ Assess gestational age →if unsure,  
Neonatologist to attend birth and assess → resuscitation if appropriate

✧ Give steroids – if 24 weeks completed 12mg Betamethsone IM 24hrs apart – 2 doses

✧ At 23 completed weeks give betamethasone as above after discussion with Neonatologist if parents have requested full resuscitation

✧ Consider tocolytics – Nifedipine – see regimen separate protocol

### Contra-indications to Tocolysis

Advanced dilatation

Moderate/heavy APH

Uterine infection

Severe lethal anomaly

Severe IUGR/Fetal compromise

## Severe PET

- ✧ Contact NICU → if no capacity → consider transfer to another unit

## Contra-indications to transfer (discuss with Consultant on-call)

- Advanced labour
- Maternal conditions, making transfer unsafe i.e. heavy APH, severe PET
- Monitoring at discretion of obstetrician – should be unobtrusive – rarely undertaken <23 weeks and often not until >25 weeks
- Caesarean section at <25/40 for maternal indications only

## Neonatology Consultant or Registrar to counsel parents re:

- Likelihood of survival and outcomes (tables 1 & 2)

Whenever possible, data specific to the age, weight, and sex of the individual preterm fetus should be used to aid management decisions.

When extremely preterm birth is anticipated, the estimated gestational age and weight should be carefully assessed, the prognosis for the fetus should be determined, and each member of the health care team should make every effort to maintain a consistent theme in their discussion with family members regarding the assessment, prognosis, and recommendations for care.<sup>1</sup>

- ✧ Planned management of resuscitation
- ✧ The possible need to modify this plan in the light of assessment of the baby at birth and response to resuscitation
- ✧ The possible need for transfer, in-utero, if changes occur in bed availability

## There should be

Documentation of above discussion and plan in the maternal notes

Clear communication to Obstetrics and midwives of the planned management

Understanding of who will try to be present at the delivery

## At delivery:

- Following counselling, the parents may wish for no resuscitation at birth. It should be made clear that this is not binding on the team; for

example if the baby is found to be more mature and vigorous than expected.

- If the baby is more immature than expected, or if there is evidence of advanced sepsis, extensive bruising or absent heart rate; resuscitation may not be appropriate.
- It may be appropriate to initiate resuscitation until clinical progress is assessed and further consultation with the parents/more senior colleagues is made.
- If parents disagree; treatment should be pursued until there is a change in the baby's status, or following further discussion with parents/more senior colleagues.
- Repeated discussions with parents regarding progress and prognosis are essential.
- Document discussions and decisions.
- If a decision not to resuscitate or to withdraw intensive care is made, continued 'comfort' care should occur i.e. warmth, the offering of oral nourishment and treated with dignity.
- If in doubt, the default is resuscitation first and discuss with consultant

#### Should death occur:

- The parents should be offered time alone with their baby.
- The parents should be offered the opportunity to discuss any concerns/questions at the time, and be aware of the possibility of a doctor being available for further discussion.
- The importance of post mortem examination should be discussed. They should be given the 'Information for Parents – Post-mortem examination of babies and children' booklet – see Trust's<sup>2</sup> new guidelines
- X-rays, microbiological specimens, skin biopsy and chromosomal analysis may need to be considered.
- If the above are unacceptable to the family, photographs and/or external examination by a Geneticist may be useful and more acceptable.
- Parents will require further counselling from the obstetric team at a later date (usually about 6 weeks) and paediatrician if appropriate.

- Medical illustration are able to take sensitive photographs for the parents

Table 1. Survival rates to 1 year for babies born alive by gestation and birthweight.<sup>3</sup>

Gestation	Survival to 1 year	Birth weight	Survival to 1 year
< 24 weeks	15%	<500g	6%
24 – 25 weeks	65%	500 – 749g	44%
26 – 27 weeks	81%	750 – 999g	81%

Table 2. Outcomes for babies discharged from the Neonatal Unit.<sup>4</sup>

Gestation	Normal	Impaired	Major disability
< 24 weeks	40%	25%	35%
24 weeks	45%	30%	25%
25 weeks	55%	25%	20%
26 – 27 weeks <sup>3</sup>	60%	30%	10%

Definitions:

**Impaired** – includes; abnormal gait; difficulties with sitting, head control, feeding using hands, impaired vision or hearing – improved with aids

**Major disability** – the need for physical assistance to perform daily activities e.g. inability to walk without assistance, unable to sit, control head or use hands to feed, blind, impaired hearing, inability to communicate.

**The role of infection in pre-term labour**

The International Pre-term Labour Council recommends the following investigations:

1. Full blood count
2. Group and save serum in case of APH and cross match if heavy APH
3. MSU for microscopy & culture and sensitivity
4. Speculum examination and HVS

**\*In-utero Transfers Contact numbers**

<u>Hospital</u>	<u>Switch Board</u>	<u>SCBU</u>	<u>Labour ward</u>

<u>Royal Gwent Hosp</u>	<u>(01633)234234</u>	<u>600599</u>	<u>600234</u> <u>600959</u>
<u>Royal Glamorgan Hospital</u>	<u>(01443)443443</u>	<u>443523</u>	<u>443524</u>
<u>Singleton Hospital Swansea</u>	<u>01792205666</u>	<u>205749</u>	<u>205788</u>

The reason for transfer should be clearly explained to the family and clearly documented

It is essential that counselling received and delivery plans are clearly communicated to the receiving hospital, so that there is continuity of management

- \* In-utero transfer may not be possible if labour is advanced or there is maternal complications i.e. severe PET, heavy APH, the baby may need to be stabilised and subsequently transferred.

#### **References:**

1. ACOG Practice Bulletin No.38 Perinatal Care at the Threshold of Viability
2. These guidelines are based on the BAPM Document 'The Management of Babies born Extremely Preterm at less than 26 weeks of gestation. A framework for Clinical Practice at the time of Birth' November 2008
3. All Wales Perinatal Survey Annual Report 2006
4. EPICure data (outcome at 2 ½ years, UK 1995 cohort) (N Eng J Med 2000; 343:378-84)
5. King et al 2003
6. Montiquin et al 2000
7. International Journal of Obstetrics & Gynaecology

## **Fetuses and Newborn Infants at the Threshold of Viability A Framework for Practice**

### **BACKGROUND**

1. With the development of neonatal intensive care, survival has become possible after a gestation as short as 22 weeks. Infants born 22 - <28 weeks gestation (approx. equivalent to 500 – 1000g) have been termed as having “threshold viability”, though in developed countries this term is more often used in reference to infants of <26 weeks.
2. The increasing potential risk of residual disability or early death associated with decreasing gestational age (especially <26 weeks) raises serious ethical dilemmas.
3. The perinatal management of the threshold-viability fetus and infant is a multidisciplinary matter. Decisions often have to be made at very short notice. Therefore, forward planning and prior agreement between members of the perinatal team is essential.

### **RECOMMENDATIONS FOR MANAGEMENT**

4. Decisions on management should be based on what is perceived by the parents and their medical advisors to be in the child’s best interests.
5. Counselling must be honest and accurate.

#### **Before Delivery**

6. As soon as the birth of a threshold viability infant is anticipated, NICU capacity should be ascertained and an experienced paediatrician should counsel the parents.
7. In-utero transfer policies should be agreed in advance between receiving and sending maternity units. Details of counselling received by the parents should be clearly communicated to the receiving unit.
8. Perinatal mortality, morbidity and future outcome relates closely to gestational age at birth. Therefore accurate antenatal estimation of gestation is essential. Physical examination of the infant after birth may lead to a revision of the original estimate – this needs to be clearly explained in advance to parents.
9. The counselling team needs to be aware of up-to-date natal and local mortality and morbidity data. The need for assessment of the baby at birth, the possible decision not to institute resuscitation, or subsequently to withdraw resuscitative measures shortly afterwards, needs to be discussed with the family prior to delivery.

10. Because birth may take place rapidly, there needs to be prospective understanding on the management and on who will try to be present at the delivery.
11. There is a need to balance maternal well-being against likely neonatal outcome. Caesarean section in the baby's interest can rarely be justified at the present time as a means of delivery prior to 25 weeks' gestation.
12. Following counselling on the likely prognosis, some parents may wish to give advance authorisation for the non-resuscitation and non-provision of intensive care. This, however, can not be considered binding by the healthcare team. For example, the newborn infant may be found to be more mature and vigorous than expected.
13. Whether monitoring is instituted, needs to be based on each individual case. Intermittent auscultation is an alternative to continuous monitoring.

#### **At and After Delivery**

14. The birth of a threshold-viability infant should be regarding as a major emergency requiring the presence of very experienced members of the obstetric and paediatric teams in the delivery room.
15. It may be appropriate to institute intensive care to threshold-viability infants at birth until the clinical progress of the infant and further consultation with the parents has clarified whether it is better to continue or withdraw this form of medical care.
16. Parents will need to be repeatedly counselled on the clinical status and prognosis of their infant. They should be encouraged to seek advice from others such as family members or religious advisors.
17. When the parents do not agree with each other, or when they do not accept their doctor's advice on whether or not to withhold or withdraw care, treatment should be pursued until a change in the baby's status or further counselling and discussion clarifies the situation.
18. Documentation of discussions with the parents and decision taken is essential.
19. Infants from whom life-sustaining support is withdrawn or withheld should continue to be kept warm, offered oral nourishment and treated with dignity and love (comfort care).

## **Should Death Occur**

20. After death, the medical team has responsibility to counsel the parents and explain the desirability for a necropsy examination. Useful information may also be obtained from procedures such as x-rays, swabs, skin biopsy and chromosomal analysis. If this is unacceptable to the family, the possibility of photographs and/or an external examination of the baby by a Geneticist may be acceptable. Parents will require further counselling from both obstetric and paediatric teams, including advice on the results of investigations and the outlook for future pregnancies.

**This is a summary of the BAPM Memorandum November 2008**