

Management of extremely pre-term labour (23 ⁺⁰ – 26 ⁺⁶ weeks gestation)			
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Management of extremely pre-term labour (23⁺⁰ – 26⁺⁶ weeks gestation)

These guidelines refer to the care of labour at the borders of viability, between 23⁺⁰ and 26⁺⁶ weeks gestation. It is important to realise that only limited evidence for best practice exists, and most of it is based on small-scale studies.

Parental involvement in decisions regarding the management of these cases is vital.

Whenever possible, parents should be seen before delivery by both a senior obstetrician and a senior paediatrician (Middle grade or Consultant) A joint discussion is the ideal, but this will not always be possible.

It is of paramount importance that **parents are given consistent figures for survival and outcome.** (See Appendix). Comparing the results of the two EPICure studies (1995 and 2006), more babies below 26 completed weeks of gestation are being admitted to neonatal units in England and there has been an overall increase in survival of 12%. However the improvement in survival has not been matched by an improvement in morbidity, with rates of brain haemorrhage (15% versus 13%), chronic lung disease (75% versus 74%) and treated retinopathy of prematurity (13% versus 21%) similar between the two studies.

Counselling should include

- Mortality and morbidity figures – assessment of antenatal history, use of most up to date figures
- Discussion re most appropriate place of delivery – need for transfer to Level 3 Unit and timing of transfer – ideally antenatally
- Discussion re resuscitation – assessment of baby at delivery and appropriate resuscitation
- Predicting delivery – Use of fetal Fibronectin test
- Possibility of delaying delivery/prolonging pregnancy – tocolytics, antibiotics, cervical cerclage
- Reducing mortality – corticosteroids, mode of delivery, magnesium sulphate administration
- Offer to visit Neonatal Unit
- Parental support available

All discussions should be clearly documented in the notes

Involvement of senior obstetric and paediatric staff is mandatory. The management of these cases should be discussed with the obstetric and paediatric consultants on-call.

Prediction of Birth Outcome

- Between 23 and 24 completed weeks, there is a 3% daily improvement in survival by prolonging gestation, and thereafter a 1-2% daily improvement until 26⁺⁶ weeks gestation.
- Gestational age is the primary determinant of almost all perinatal outcomes. Accurate gestational age determination is essential – check dating scan and confirm gestational age at earliest opportunity. Where there is a discrepancy between the gestation by dates and the scan ensure that this has been discussed and an EDD agreed
- A decision to resuscitate a baby born at extreme prematurity should not be based solely on EFW (estimated fetal weight) but on consideration of the true birthweight measured immediately after birth, and neonatal vigour.

Place of Delivery

- Ideally, extremely preterm infants should be delivered in a centre with expertise in the care of these infants. Where possible, all pregnancies of 23⁺⁰ to 26⁺⁶ weeks gestation should be transferred to a maternity unit with a NICU.
- In-utero transfer is preferable to ex-utero transfer, but this may not always be possible, in which case the baby will be stabilised at Stepping Hill prior to transfer.
- The doctor arranging the in-utero transfer should ensure that both mother and fetus are in a stable condition prior to leaving the unit.
- It is recommended that a test of prediction of preterm labour, e.g fetal fibronectin is performed if possible in women presenting with threatened preterm labour at the limits of viability, when in utero transfer to an appropriate level neonatal unit is being considered. (The use of fetal fibronectin testing is not recommended in the case of moderate or heavy vaginal bleeding, rupture of membranes, sexual intercourse within the previous 24 hours and use of lubricant gel within the previous 24 hours.)

Decision to Offer Intensive Care

This is a very difficult decision at these gestations and will depend upon an assessment of maturity, size and wellbeing at birth. Each case will need to be assessed individually and a decision made about whether intensive care is appropriate. It may not be appropriate to offer aggressive resuscitation to an extremely premature baby born in very poor condition as the outcome is likely to be very poor. The use of adrenaline in resuscitation at these gestations is generally not recommended as this is shown to be associated with very poor outcomes.

Maternal and Fetal Antenatal Interventions

Tocolysis

No study has shown that tocolysis reduces rates of preterm delivery or improves neonatal outcome, however in view of the daily improvement in survival by prolonging gestation in extremely preterm infants, attempts to prolong the pregnancy may be beneficial. This may also allow time for the administration of corticosteroids and for in-utero transfer.

In view of the survival and handicap figures for 23 weeks, the use of tocolytics below 24+0 weeks gestation cannot currently be recommended.

Cervical Cerclage

Insertion of a cervical cerclage can be performed as a salvage measure in the case of premature cervical dilatation with exposed fetal membranes in the vagina but is not recommended when a woman is in established preterm labour, or in the case of ruptured membranes.

Insertion of a cervical cerclage is also not recommended if there is a suspicion of infection.

Antenatal Corticosteroid Administration

All women requiring, or at high risk of, impending preterm delivery between 24+0 and 34+6 weeks of gestation should receive antenatal corticosteroids.

Corticosteroids should be considered between 23 and 24 weeks.

Maternal Antibiotic Administration

Prematurity is a risk factor for early onset group B streptococcus (GBS) disease for neonates. For women presenting in preterm labour with intact membranes and with no other risk factors for vaginal GBS infection or indicators of chorioamnionitis, intrapartum antibiotics should not be offered unless the woman is known to be colonised with GBS. (The 7 year follow-up of

infants in the ORACLE II trial has shown an increased risk of cerebral palsy and functional impairment with no reduction in the number of neonatal deaths in the children of mothers who received antibiotics in the absence of infection)
Co-amoxiclav (Augmentin) should be avoided in view of its association with a significant increase in the occurrence of neonatal necrotising enterocolitis (ORACLE I trial, 2001).
In women with preterm prelabour rupture of membranes, in the absence of contraindications, a 10 day course of Erythromycin 250 mg qds should be given.

Maternal Magnesium Sulphate Administration

Once the gestation of 24 weeks is reached, peripartum magnesium sulphate infusion is recommended to reduce the risk of cerebral palsy.
Prior to 24 weeks gestation magnesium sulphate can be considered after discussion with the paediatric team and the parents depending on individual circumstances.

Induction of labour

Occasionally it becomes necessary to expedite delivery at the threshold of viability for maternal benefit, for example, when severe chorioamnionitis has developed. The best method to induce labour at extreme prematurity is currently unknown.

Interventions for Delivery

Mode of Delivery

The optimal mode of delivery at these early gestational ages remains unknown. For a longitudinal presentation (cephalic or breech), there is no evidence that a policy of elective Caesarean section confers any benefit to the fetus. Decisions regarding mode of delivery should therefore be individualised, and be based on the available information regarding maternal and fetal wellbeing. Regardless of mode of delivery, an experienced paediatrician should be in attendance.

Fetal Monitoring

There is no evidence for the use of ultrasound in preterm labour at the threshold of viability.
At present there is no evidence that continuous or intermittent fetal heart rate monitoring is of benefit in infants at the threshold of viability during labour.
At these early gestational ages, CTG monitoring and interpretation is difficult.
However, when other efforts are made to maximise the potential for a good fetal outcome, it would seem legitimate to attempt this, even on an intermittent basis.
Discussion should be had with the parents and a plan made on an individual basis.

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- Costeloe KL, Hennessy EM, Haider S, Stacey F, Marlow N, Draper ES. Short term outcomes after extreme preterm birth in England: comparison of two birth cohorts in 1995 and 2006 (the EPICure studies). BMJ 2012;345:e7976.
- Magnesium sulphate to Prevent Cerebral Palsy following Preterm Birth.
https://www.rcog.org.uk/globalassets/documents/guidelines/scientific-impact-papers/sip_29.pdf

APPENDIX

EPICure study

Pediatrics 2000; **106**:659-671, N Engl J Med 2000; **343**: 378 -84

- outcome of pregnancies 22+0 – 25+6 weeks gestation (10 months from March 1995 – December 1995)

- 1185 live births 22-25+6 weeks with FU data at 2.5 years

	22w	23w	24w	25w
Live births	138	241	382	424
Admitted for IC	22	131	298	357
Survived to discharge	2 (1%)	26 (11%)	100 (26%)	186 (44%)
Survival with no/mild disability (% of survivors)	1 (50%)	17 (63%)	73 (73%)	142 (75%)

i.e the mortality of 24 week gestation babies is of the order of 75% and of those that survive a quarter have significant handicap

EPICure 2 Cohort Data

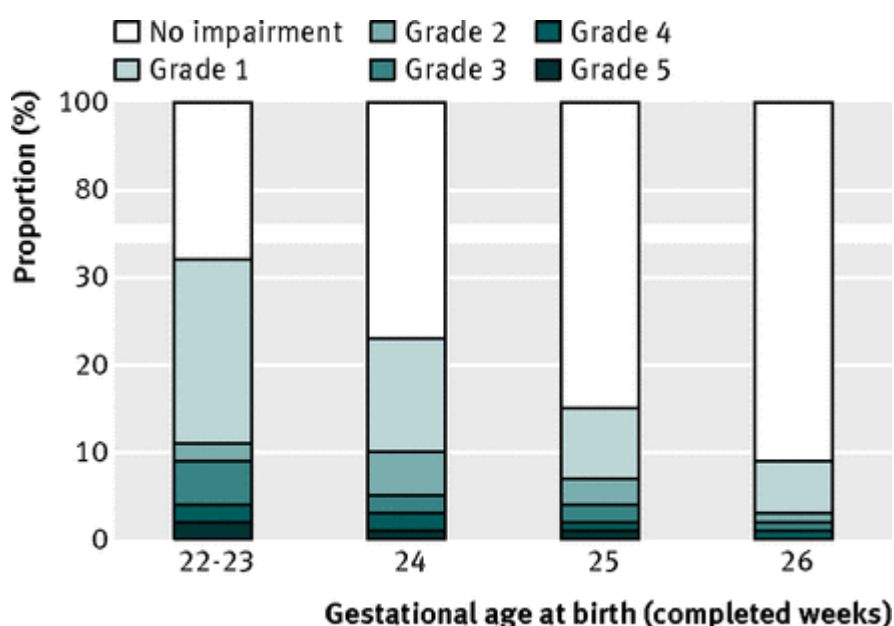
Collected data on all pregnancies 22+0 – 26+6 weeks delivered in 2006

Overall outcome by different denominators at each completed week of gestation for EPICure 2 cohort born in England during 2006; disability classified as in Disability and Perinatal Care 1994.

<http://www.epicure.ac.uk/overview/overall-outcome/>

Gestational age at birth	22 weeks	23 weeks	24 weeks	25 weeks	26 weeks
Population					
Alive at the onset of labour	272	416	495	550	594
Livebirth	152	339	443	521	580
Livebirth with intended care *	41	284	427	514	576
Admission for neonatal care	19	217	382	498	571
Deaths in Neonatal care	16	151	204	152	123
Deaths after discharge home	0	3	1	5	1
Survivors to 3 years of age	3	63	177	341	447
Survivors with severe disability §	1	17	37	57	45
Survivors with moderate disability §	1	14	33	48	54
Survivors without disability §	1	32	107	236	348
Survival					
from onset of labour	1%	15%	36%	62%	75%
of livebirths with intended care *	7%	22%	42%	66%	78%
of admissions for neonatal care	16%	29%	46%	69%	78%
Survival without disability					
from onset of labour	0.4%	8%	22%	43%	59%
of livebirths with intended care *	2%	11%	25%	46%	60%
of admissions for neonatal care	5%	14%	28%	47%	61%

Functional outcomes at 3 years of age graded according to Gross Motor Function Classification System for babies born before 27 weeks' gestation in 2006, England
(*BMJ* 2012;345:e7961)



BAPM Framework 2008

The management of babies born Extremely Preterm at less than 26 weeks gestation

<http://www.bapm.org/media/documents/publications/Approved%20manuscript%20preterm%20final.pdf>

Trent group (David Field et al)

Prospective cohort study of extremely premature babies in Trent region comparing 1994-1999 with 2000- 2005

[BMJ](#). 2008 May 31;336(7655):1221-3. Epub 2008 May 9.

Review by Rennie (Lancet 1996)
Lancet. 1996 Nov 30;348(9040):1515-6.

Critical care decisions in fetal and neonatal medicine: ethical issues.
Nuffield Council on Bioethics 2006 www.nuffieldbioethics.org

Other studies from Europe

France - Epipage and Epipage 2

Belgium - EPIBEL (Pediatrics. 2004 Sep;114(3):663-75)

Vermont Oxford Network (Kaempf JW, Tomlinson M et al. Medical Staff Guidelines for periviability pregnancy counselling and medical treatment of extremely premature infants. Pediatrics 2006; **117**, 22-29.)

Survival and Neurological Disability Rates amongst extremely premature infants:

Weeks at birth	Survival % (Literature survey)	Survival % VON 2003	Severe neurologic disability % (literature survey)	Moderate neurologic disability % (literature survey)
< 23	~ 5	8	?	?
23 0+6	~15	32	30-35	20-30
24 0+6	~40	58	25-30	20-30
25 0+6	~60	76	20-25	20-30
26 0+6	~75	83	15-20	20

VON – Vermont Oxford Network

Severe neurologic disability: IQ <70 or >2 SD below mean, cerebral palsy, blindness and/or deafness

Moderate neurologic disability: IQ 70-84 or 1-2 SD below mean, moderate disorders of motor skills, vision, hearing, academic achievements, social performance

8. MONITORING

Monitoring Template for Trust Approved Documents

Process for monitoring e.g. audit	Responsible individual/ group/ committee	Frequency of monitoring	Responsible individual/ group/ committee for review of results	Responsible individual/ group/ committee for development of action plan	Responsible individual/ group/ committee for monitoring of action plan
Audit	O&G Audit lead	3 yearly	O&G Audit meeting	O&G Audit Lead/Auditor	Quality Governance Committee 6 monthly

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