



## **Consensus statement on management at borderline of viability**

This joint Northern Neonatal Network and Maternity Network document aims to address the timing of transfer to a Level 3 neonatal centre and administration of antenatal steroid and magnesium sulphate for women with threatened labour at late 21 weeks or 22 weeks gestation onwards. This document should read be in conjunction with 1) the BAPM framework on perinatal management of extreme preterm birth before 27 weeks of gestation<sup>1</sup> which is a more detailed document explaining the rationale of the framework 2) Preterm Birth Guideline.

The results from the EPICure2 data suggests there is an increase in the survival and disability free survival in the extreme premature infants born before 26 completed weeks of gestation especially in the 24 and 25 weeks gestation. The observed benefits stem from better antenatal care provided such as use of steroids, use of surfactant and improved postnatal management.

Increasingly the survival at 23 weeks has improved in recent years. Survival rates at 23 week for the Northern Neonatal is 60%. (3-year rolling average). There is increasing evidence of benefit in use of antenatal steroids below 24 weeks. A large prospective cohort study<sup>2</sup> by the NICHD network showed that benefits of corticosteroid therapy. Death or neurodevelopmental impairment in surviving infants born at 23 weeks gestation was significantly lower at 18 to 22 months infants when at least one dose of antenatal steroid therapy was administered [83.4% vs. 90.5%; AOR 0.58 (95% CI 0.42-0.80)]. In a separate retrospective cohort study (N=181), Hayes et al<sup>3</sup> showed 82% reduction in the odds of death when complete antenatal steroid therapy was administered at 23 weeks of gestation. The multivariable analysis showed decreased odds of death (OR 0.18, 95% CI 0.06-0.54). In another retrospective study, Abbasi et al<sup>4</sup> showed exposure to single course of corticosteroids prior to 24 weeks gestation was associated with reduction in risk of severe IVH and neonatal mortality.

BAPM framework reported - "recent UK data, for babies born in 2016, indicate survival to one year of 38% of those babies 23+0 to 23+6 weeks of gestation who received active treatment after birth<sup>5</sup> Similar survival rates for admitted babies at 22 weeks of gestation are reported but the number of surviving babies at 22 weeks of gestation is small, with appreciable in-labour mortality, and thus the CI are wider than at later gestational ages. These figures accord with international data which show a trend towards increasing survival at 22 weeks of gestation, with reported survival rates of approximately one third in babies who receive active care at birth. Since only a small proportion of babies born at 22 weeks of gestation receive active treatment, there is the possibility of selection bias and survivors may represent a sub-group of 22 week gestation babies with more favourable risk factors."

In the light of the current evidence and the BAPM framework on perinatal management of extreme preterm birth before 27 weeks of gestation, it is important to have a uniform of approach across the maternity and neonatal networks. There have been requests from network colleagues for guidance around timing of transfer and use of antenatal steroids. After discussion at the maternity and neonatal network meetings it was agreed

In > 23 weeks gestation

- To transfer the woman to a Level 3 centre.
- To offer antenatal optimisation (steroids,  $\pm$ magnesium sulphate,  $\pm$ antibiotics).
- To discuss the above with the obstetric and neonatal team at the level 3 centre.

### In < 23 weeks gestation

- To consider offering transfer to a tertiary centre from 22+0 weeks if the woman wishes for active intervention explaining a further discussion would take place in the level 3 centre. Transfer would not mean automatic active intervention.
- Antenatal optimisation would be considered after counselling family at level 3 centre.
- To discuss the above with the obstetric and neonatal team at the level 3 centre.

The parents' wishes and previous obstetric history play an important role. Parents should be involved in planning and should involve senior clinical staff from the obstetric, midwifery and neonatal teams who will be caring for the mother and her baby before, during and after the birth. Clear and balanced information should be shared and management plans explored. In utero transfer to a maternity facility co-located with a NICU should be considered at the earliest opportunity when active management is planned. All such transfers should be discussed with the receiving team, and parents should be made aware that the prognosis (and therefore management) may be revised following in utero transfer to a centre with greater experience of managing extremely preterm birth.

### References:

- 1 BAPM framework on perinatal management of extreme preterm birth before 27 weeks of gestation
- 2 Carlo et al. Association of Antenatal Corticosteroids with Mortality and Neurodevelopmental Outcomes among Infants Born at 22 to 25 Weeks' Gestation. *JAMA*. 2011;306(21):2348-2358
- 3 Hayes EJ, Paul DA, Stahl GE, et al. Effect of antenatal corticosteroids on survival for neonates born at 23 weeks of gestation. *Obstet Gynecol*. 2008;111(4):921-926
- 4 Abbasi S, Oxford C, Gerdes J, Sehdev H, Ludmir J. Antenatal corticosteroids prior to 24 weeks' gestation and neonatal outcome of extremely low birth weight infants. *Am J Perinatol*. 2010;27(1):61-66
- 5 Smith LK, Draper ES, Manktelow BN, Fenton A, Kurinczuk J on behalf of the MBRRACE-UK Collaboration. MBRRACEUK Report on survival up to one year of age of babies born before 27 weeks gestational age for births in Great Britain from January to December 2016. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester. 2018