

Maternal Brain Death

Practice Update 2017

There have been a number of documented cases of maternal brain death in the second and third trimester of pregnancy in Ireland^{1,2}. The approach to the diagnosis of brain death for the mother is no different to that of any other adult. However, where a pregnancy remains on-going, the approach to the care of the unborn child needs a separate consideration. Changes in maternal and foetal acid-base relationship during apnoea testing have not been subject to clinical trials, nor has permissive hypercapnoea been evaluated in pregnancy. There are numerous reviews and reports of mechanical ventilation in ARDS and acute severe asthma in pregnancy, suggesting that provided hypoxaemia is avoided, maternal hypercapnoea can be tolerated by the fetus with ultimate good outcome^{3,4}.

Only one such case⁵ has required the intervention of the High Court. The lack of intervention has been a result of natural circumstance where, although somatic support for the brain dead mother has continued in some circumstances, due to the early gestational age the foetus (in all these Irish cases) have not survived. Various legal opinion has been made public for some of these cases, including that of the Attorney General in one such case. In a reference case of 2014 the hospitals felt bound by the Constitution to continue somatic support. This position was challenged by the family in this reference case where the gestational age of the foetus was 15 weeks, resulting in the High Court decision and a cessation of somatic support 24 days post brain death.

The relevant legislation is the Constitution of Ireland⁶ Article 40.3.3 which states:

"The State acknowledges the right to life of the unborn and with due regard to the equal right to life of the mother, guarantees in its laws to respect and as far as practicable, by its laws to defend and vindicate that right."

The focus of the reference High Court judgement was entirely on whether the foetus could be brought to a point of maturity to have potential to survive:

"This case turns on its own particular facts which are centred entirely on whether the unborn child can survive at all."

The potential for significant disability, although recognized by the court, was not considered to be a determining factor.

Further, the rights of the mother to dignity in death were also identified and recognized. However, in the context of Article 40.3.3:

"However, when the mother who dies is bearing an unborn child at the time of her death, the rights of child, who is living and whose interests are not necessarily inimical to those just expressed, must prevail over the feelings of grief and respect for a mother who is no longer living."

Based on the medical evidence presented, the High Court judgment stated:

“Given that the unborn in this jurisdiction enjoys and has the constitutional guarantee of a right to life, the court is satisfied that a necessary part of vindicating that right is to enquire as to the practicality and utility of continuing life support measures.”

And hence cessation of somatic support was directed in this case as the medical evidence was in full agreement that such support in the context of both the gestational age and the maternal condition had no prospect of success.

The international context^{6,7} acts as the benchmark to standard practice. In this reference case, the clinical context was one where sustained somatic support was not realistic. Such may not always be the case. As of January 2015, the literature identifies 20 reported cases of maternal brain death with extended somatic support. From this cohort, 13 viable infants were born and in 8 of these cases the gestational age at the time of brain death was ≤ 17 weeks. For this subgroup 3 infants survived. A 4th child died 39 days post delivery. As a trial of a therapy, this would be considered to be a very small cohort of patients (ie. most ICM reference or practice changing trials would have many hundreds of patients and indeed cardiology trials might have many thousands).

At this point in time, the practice of sustained somatic support is a rarity internationally, and could not be termed a standard of practice. These are all individual cases, rather than a case series by any group. It is presumed that in all these cases there was next of kin consent and a desire to proceed with such prolonged support. There is not a published counter-balance of known failed somatic support to give a true representation of numbers involved. Arguably each case could be described as experimental, or to use the terminology of the judgment *“extreme or remote possibilities in medical treatment”*.

There are two central critical decisions to be made in terms of such support:

- a) Can such support be successfully sustained?
- b) When is viability?

The ability to provide such somatic support falls within the expertise of Intensive Care Medicine. Such ability will be dictated on a case-by-case basis, as each person suffers a different physiological course through the period of time post brain death. The ability to address the physiological consequences and complications of such events will change with intensive care practice developments.

The question of neonatal viability needs to be posed to other specialists. We are guided by this 2014 judgment that the survival of the unborn is the relevant outcome rather than predictable degrees of impairment through prematurity. The question of viability needs therefore to be posed to both obstetricians and neonatologists, on a case by case basis and informed by changes in practice and outcomes.

This High Court has set the context, the Constitutional basis and the relevant questions to be asked. It does not direct that all such cases need referral to the High Court.

This practice update is informed by the 2014 reference case. It is not an ethical guideline nor indeed a practice guideline. Each case will need to be considered on its own merits and in the context of changes in medical practice over time.

The ICSI may be approached to help identify medical experts in Intensive Care in Ireland to help advise on such cases should the need arise.

Selected reading / references:

1. Lane A, Westbrook A, Grady D, O'Connor R, Counihan TJ, Marsh B, Laffey JG. Maternal brain death: medical, ethical and legal issues. *Intensive Care Med.* 2004 Jul;30(7):1484-6.
2. Maternal Brain Death, Pregnancy and the Foetus: The Medico-Legal Implications. Asim A. Sheikh & Denis A. Cusack. *Medico-Legal J.Ir.* 75,79 (2001)
3. Acute respiratory failure in pregnancy. Stephen E Lapinsky. *Obstetric Medicine* 2015, Vol. 8(3) 126–132
4. Case Report. A Case of Sevoflurane Use during Pregnancy in the Management of Persistent Status Asthmaticus. Parrott J, Trner M, Dennis K, Sharpe M, Clark-Ganheart C. *Case Reports in Obstetrics and Gynecology Volume 2017*
5. High Court Dublin Record No. 2014/10792P P.P. Plaintiff and The Health Services Executive Defendant December 2014
6. Maternal Brain Death Daniel Sperling *American Journal of Law & Medicine*, 30 (2004): 453-500 © 2004 American Society of Law, Medicine & Ethics Boston University School of Law
7. Royal College of Obstetricians and Gynaecologists. Ethics Committee Guideline No. 1. September 2006. Law and Ethics in Relation to Court-Authorised Obstetric Intervention.