

Letter to the Editor

TO THE EDITOR

RE: Guidelines For Brain Death

As a practicing pediatric intensive care physician I was pleased to see the publication of the guidelines for the diagnosis of brain death. The document on the whole is sound and an excellent review.

However, I find the "special circumstances" section as it pertains to children to be very ambiguous. In the first sentence it states that adult clinical criteria may be applied to those patients 52 weeks postconceptual age or greater. It also states that clinical criteria alone are not sufficient under this age. But, the committee then goes on to recommend 2 EEGs for children 2 months to 1 year.

If clinical criteria alone are insufficient in the 2 months to 1 year age group, why not state this?

Is it the intent of this document, which will in all likelihood will influence practice nationally, to change what has been common practise in many ICUs – that is to add EEGs to all children from 2 months to 1 year, instead of applying clinical criteria alone?

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RESPONSE TO THE LETTER-TO-THE-EDITOR BY DR. FLEMING

Re: "Guidelines for the Diagnosis of Brain Death" published in the Canadian Journal of Neurological Sciences 1999;26:64-66 by Drs. Shashi Seshia, Marc-Andr Beaulieu, Jeanne Teitelbaum and Bryan Young

We thank Dr. F.L. Fleming for her thoughtful remarks.

We have been cautious in stating that "in children with a conceptual age of 52 weeks or older (more than 2 months post-term) the adult clinical criteria can be applied."¹ Recommendations for the declaration of brain death in young children are based largely on Class III evidence (opinions of experts, findings from descriptive studies or reports of expert committees). Clinical criteria may be difficult to apply in infants; for this reason we accepted Fishman's cautionary note and supported the suggestion made by the Task Force for the Determination of Brain Death in Children for the 2 month-1 year age group.^{2,3,4}

Our intent was to minimize self-fulfilling prophecies.

Ashwal and Schneider reviewed pediatric brain death in detail and found that no child clinically diagnosed as being brain dead (by "adult criteria", duration between assessments excluded) for

more than 2-3 days regained brain function.⁵ They commented, however, that the apnea threshold in very young infants has yet to be determined. Moreover, Okamoto and Sugimoto described the return of spontaneous respiration in a three month old infant in whom neurological examination and EEG fulfilled the criteria previously set by the Task Force for the Determination of Brain Death in Children (1987), with assessments 48 hours apart.⁶

Parker et al. studied the criteria used to declare brain death in a Canadian pediatric critical care unit through a retrospective chart review.⁷ Although brain death was diagnosed using clinical criteria alone in 39 of 60 cases, clinical criteria could not be applied fully in 21 of the 60 (35%) of the cases. In this study ancillary tests were carried out in 16 patients with certified brain death and 17 with uncertifiable but clinically suspected brain death. There was neuropathological confirmation of nonviable brains in all those autopsied. Feedback from extensive circulation of our draft document also confirmed that adult-based guidelines were being used for the diagnosis of brain death in children with variations in the intervals between examinations.

Electroencephalograms are not mandatory in children being considered for the diagnosis of brain death. However, in practice, the finding of an isoelectric EEG, along with clinical criteria, serves as appropriate "screening" for the application of the apnea test. The latter may be more problematic in very young infants.

We urge all Pediatric Critical Care Units to join us in developing an evidence-based approach to further refine the guidelines for the determination of brain death in children. A prospective multi-centred approach will lead to Class II evidence that will allow the issue to be revisited. In the meantime, we look forward to further comments and suggestions.

*M-A. Beaulieu (Ottawa), S. Seshia (Winnipeg),
J. Teitelbaum (Montreal), B. Young (Ontario)*

References:

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2. Fishman MA. Validity of brain death in infants. *Pediatrics* 1995;96:513-515.
3. Report of Special Task Force: Guidelines for the determination of brain death in children. *Pediatrics* 1987;80:298-302.
4. Task Force for the Determination of Brain Death in Children. Guidelines for the determination of brain death in children. *Arch Neurol* 1995;44:587-588.
5. Ashwal S, Schneider S. Brain death in the newborn. *Pediatrics* 1989;84:429-437.
6. Okamoto K, Sugimoto T. Return of spontaneous respiration in an infant who fulfilled current criteria to determine brain death. *Pediatrics* 1995;96:518-520.
7. Parker BL, Frewen TC, Levin SD, et al. Declaring pediatric brain death: current practice in a Canadian pediatric critical care unit. *Can Med Assoc J* 1995;153:909-916.