

Neurodevelopmental outcome at 2 years corrected age following highly conservative treatment of the patent ductus arteriosus in extremely low gestational age neonates (ELGANs).

*Psiouri L., Orme J., Menon G., Kissack C., Johnston E., Piyasena C., Stenson B.
Neonatal Unit, Simpson Centre for Reproductive Health, Edinburgh, Scotland*

Objectives

There is no consensus on the optimal management of the patent ductus arteriosus (PDA) in ELGANs. Although no single intervention has clear demonstrable clinical benefit, treatment for PDA is widespread. There is a lack of long-term outcome data when PDA management is highly conservative. We describe the clinical and developmental outcomes at 2 years corrected age in a population of ELGANs in which echocardiographic assessment and treatment of PDA were extremely rare.

Methods

The outcomes of all infants born at less than 28 complete weeks gestation (range 23+1 to 27+6 weeks) between January 2006 to June 2009 and admitted on their day of birth to a single tertiary NICU were ascertained (Simpson Centre for Reproductive Health, Edinburgh). PDA treatment was noted. Clinical and developmental assessment outcomes at 2 years corrected age were obtained using a standardised proforma based on the Health Status Questionnaire and reported according to BAPM 2008 classification. Where cognitive outcomes are described, assessment was with Bayley-III scales for infant development.

Results

115 ELGANs were admitted. 21 died before discharge and 1 died in infancy. Of the surviving 93 infants, none were treated with COX inhibitors, one had primary surgical PDA ligation and another had PDA ligation in infancy. Both children's two-year outcomes are known. Two-year follow up data are not available for 15/93 children. At discharge from NICU in those 15, two had PVL (one of whom also had laser treatment for ROP), one more had laser for ROP, none had IVH grade >2 and one received home oxygen. Two-year outcomes for the remaining 78 are as follows:

Impairment	No significant disability			Neurodevelopmental impairment		
	None	Mild	%	Moderate	Severe	%
Motor (<i>n</i> =78)	70	2	92.3	3	3	7.7
Hearing (<i>n</i> =78)	74	1	96.2	2	1	3.8
Vision (<i>n</i> =78)	75	0	96.2	3	0	3.8
Language (<i>n</i> =76)	61	4	85.5	7	4	14.5
Cognition (<i>n</i> =40)	37	0	92.5	3	0	7.5

Conclusions

Survival and neurodevelopmental outcome at 2 years corrected age in a population of ELGANs in which diagnosis and treatment of PDA were highly selective are favourable. Randomised controlled trials of PDA treatment are still required.