Primary outcome IVIG 691 (39.3%), Placebo 682 (39.3%), RR 1.0 (0.86,1.16)

Mortality at 2yrs IVIG 317 (18%), Placebo 304 (17.5%), RR 1.03 (0.89-1.19)

Survivors

Disability at 2yrs IVIG 374 (25.9%), Placebo 378 (26.4%), RR 0.98 (0.87-1.11)

Conclusions: Intravenous immunoglobulin therapy had no effect on the outcomes of suspected or proven neonatal sepsis. This trial is substantially larger (n=3,493) than all the other trials in the previous meta-analysis combined (n=378) and illustrates the importance of large pragmatic trials in establishing the role of emerging treatments before their widespread introduction on the basis of potentially unreliable evidence.

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EARLY PRETERM NEONATAL NEUTROPHIL FUNCTION IN RESPONSE TO ENDOTOXIN.

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Objective: To assess neutrophil function in premature infants in the first week of life.

Method: We prospectively collected serial blood samples from premature infants (n=11; < 32 weeks gestation) on day 1, 2 and 7 of life and from adult controls (n=11). Whole blood CD11b and Toll Like Receptor 4 (TLR4) expression as well as reactive oxygen intermediate (ROI) production were evaluated using appropriate antibodies and fluorescent substrates via flow cytometry.

Results: Preterm baseline CD11b expression was comparable to adults. Baseline neonatal TLR4 expression was decreased compared with adults. Although CD11b and TLR4 expression increased following LPS stimulation, they failed to reach adult levels. Baseline neonatal ROI production was also reduced but increased to adult values by DOL 7.

		Adult	Preterm			
			DOL 1	DOL 2	DOL 7	p value
CD11b	**FI**	4.6 +/- 1.2	2.8 +/- 0.9	2.6 +/- 1.4	2.3 +/- 0.9	<0.001
TLR4	**Con**	1123 +/- 172	674 +/- 253	1088 +/- 354	734 +/- 169	NS
	LPS	1301 +/- 674	970 +/- 187	1368 +/- 418	1072 +/- 406	<0.01
ROI	**Con**	19649 +/- 5200	7059 +/- 2434	9210 +/- 582	13764 +/- 1006	<0.001
	LPS	21173 +/- 5410	9107 +/- 551	10548 +/- 3047	15159 +/- 5790	<0.01

[Results]

Mean +/- Standard deviation; FI fold increase; DOL= day of life; p value comparing adult and preterms

Conclusions: Preterm infants have altered immune function in the first week of life with a reduction in endotoxin response compared with adults. This may increase their susceptibility to infection but could also minimise damaging inflammatory responses.

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B-TYPE NATRIURETIC PEPTIDE AS EARLY BIOMARKER FOR EVALUATION OF PERSISTENT PULMONARY HYPERTENSION TREATMENT IN NEONATES

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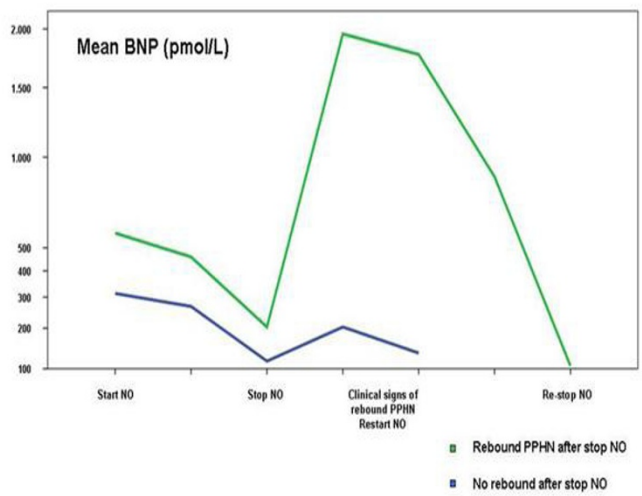
Background: During persistent pulmonary hypertension (PPHN) the pulmonary vascular resistance remains elevated in the neonatal period. Treatment is directed towards decreasing the pulmonary vascular resistance (Nitric Oxide (NO)) and preserving adequate blood pressure. Besides regular echocardiographic evaluation, no biomarker is available to evaluate the effectiveness of the treatment.

We investigated whether serum B-type Natriuretic Peptide (BNP) is a useful biomarker to evaluate the course of PPHN and effectiveness of treatment.

Design/ methods: 24 patients with PPHN were treated. Serum BNP levels were determined longitudinally. 3 patients were excluded because of the need for ECMO. In 6 patients a rebound of PPHN occurred after treatment was terminated. BNP levels were compared between infants with or without rebound PPHN (n=15).

Results: All PPHN infants had similar BNP levels at the start of initial NO. BNP levels decreased in both groups during NO treatment. In the infants who developed a rebound PPHN an increase was found in BNP shortly after cessation of NO treatment. This occurred well before the onset of clinical deterioration. BNP again decreased significantly during NO treatment ($p< 0.05$). Figure 1 provides the course of BNP.

Figure 1



[FIgure 1]

Conclusion: BNP, as a biomarker of cardiac ventricular strain, proved to be useful in evaluating the course and treatment of PPHN and can serve as a predictor of rebound PPHN.

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SHOULD INFANTS WHO HAVE EARLY MAJOR SURGERY BE ENROLLED IN FOLLOW-UP CLINICS?

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Background: Survival following major surgery in early infancy is over 97% in Australia. This has focussed attention on the long term outcomes for these infants. Although there are many studies regarding developmental outcome of babies who have undergone cardiac surgery, the outcomes for babies who undergo other types of major surgery have been neglected. Unlike their preterm counterparts, infants who undergo major surgery are not routinely enrolled in newborn developmental follow-up clinics.

Objective: To compare the early developmental outcome of infants who underwent cardiac surgery with those who underwent major non-cardiac surgery and healthy controls.

Method: This prospective population-based study enrolled 784 infants between August 2006 and December 2008 from the three Children's Hospitals in New South Wales and their co-located maternity units. They were assessed at one year of age (corrected) using the five subscales (cognition, expressive and receptive language, gross and fine motor) of the Bayley Scales of Infants and Toddler Development (Version-III).

Results: Infants who underwent cardiac surgery scored significantly lower on all subscales than control infants ($p< 0.001$). Similarly, infants who underwent non-cardiac surgery also scored lower than the control infants on all subscales ($p< 0.05$). Infants who underwent cardiac surgery scored significantly lower than the infants who underwent non-cardiac surgery on four of the subscales ($p< .05$).**Conclusion:** These important early findings suggest that Infants who undergo non-cardiac major surgery and cardiac surgery are at high risk of developmental impairment. Infants who undergo major surgery warrant systematic