Study Selection Criteria: Cohort and case-control studies from 2000 onwards: Four reviewers independently assessed eligibility.
Data Extraction and analysis: The outcome measure was 'all stages of ROP'. Quality assessment of studies was done using Newcastle-Ottawa scale. A random effects meta-analysis model was used and heterogeneity was assessed using I^2 statistic.
Results Nine studies met the final selection criteria. Total sample size was 2106 preterm infants with median gestational age 30 weeks and birth weight 1228 grams. Blood transfusion was associated with the development of ROP; unadjusted odds ratio (OR) = 3.05 (95% CI 2.16 to 4.32) with a significant heterogeneity (I^2 = 54.8% p = 0.02). The unadjusted pooled OR in three of these studies was 2.59 (95% CI 1.35 to 4.98) and the adjusted pooled OR was 1.18 (95% CI 0.96 to 1.33), I^2 = 8.8%.
Conclusion Blood transfusion was associated with the development of ROP in preterm infants. However once other factors such as gestational age and birth weight were adjusted for, the association between blood transfusion and ROP development was considerably weaker.

REFERENCE
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PS-201a HYPERBILIRUBINEMIA AND PHOTOTHERAPY IN NEWBORNS AFFECT CARDIOVASCULAR AUTONOMIC CONTROL

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Background Neonatal jaundice and its phototherapeutic treatment can lead to side effects involving activation of autonomic control mechanisms.
Aim To investigate the autonomic nervous system changes in icteric neonates using heart rate variability (HRV) and to assess the effect of phototherapy on HRV as an indicator of autonomic nervous control of cardiovascular system.
Methods HRV recordings of 20 icteric full-term neonates before, during and after the phototherapy and of 20 healthy controls were analysed. Besides traditional time and frequency domain measures, HRV complexity parameters including normalised complexity index (NCI), normalised unpredictability index (NUPI), pattern classification (0V%, 1V%, 2LV%, 2UV%) and multiscale irreversibility indices (P%, G%, E) were evaluated. All measures were derived from data segments of 1000 RR intervals.
Results The analysis revealed higher values of 1V% and 2LV%, lower P% and reduced percentage of irreversible HRV recordings in the group of neonates with hyperbilirubinemia. While mean heart rate was increased during and after the phototherapy, HRV magnitude was not changed. Nonlinear analysis showed a decrease of complexity, unpredictability and pattern classification measures 2LV% and 2UV%. In contrast, 0V%, P% and the percentage of irreversible recordings were increased during and after the phototherapy.
Conclusion The results suggest a shifted autonomic balance in icteric neonates compared to the controls and its further alterations during phototherapy. As the nonlinear HRV parameters are independent of the linear methods, they can provide new information about the cardiac regulatory mechanisms and their changes in neonates.

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PS-201b THE OUTCOME OF TREATMENT LIMITATION DISCUSSIONS IN NEWBORNS WITH BRAIN INJURY

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Background Most deaths in severely brain-injured newborns in neonatal intensive care units (NICU) follow discussions and explicit decisions to limit life-sustaining treatment. There is little published information on such discussions.
Objective To describe the prevalence, nature and outcome of treatment limitation discussions (TLD) in critically ill newborns with severe brain injury.
Design A retrospective statewide cohort study.
Setting Two tertiary NICUs in South Australia.
Patients Ventilated newborns with severe hypoxic ischaemic encephalopathy and peri-/intraventricular haemorrhage (P/IVH) admitted over a 6-year period from 2001–6.
Main outcome measures Short-term outcome (until hospital discharge) including presence and content of TLDs, early childhood mortality, school-age functional outcome.
Results We identified 145 infants with severe brain injury; 78/145 (54%) infants had documented TLDs. Fifty-six infants (39%) died prior to discharge, all following treatment limitation. The majority of deaths (41/56; 73%) occurred in physiologically stable infants. Twenty-two of 78 (28%) infants with at least one documented TLD survived to discharge, most in the setting of explicit or inferred decisions to continue treatment. The majority of long-term survivors after TLD (8/15, 53%) were severely impaired at follow-up. Two thirds of surviving infants with TLD in the setting of unilateral P/IVH had mild or no disability.
Conclusions and relvance Some critically ill newborn infants with brain injury survive following TLDs between their parents and physicians. Outcome in this group of infants provides valuable information about the integrity of prognostication in NICU, and should be incorporated into counselling.

Neonatal Lung Injury

PS-202 INFLUENCE OF MODERATE PERMISSIVE HYPERCAPNIA ON PULMONAL INFLAMMATION IN EXTREMELY LOW BIRTHWEIGHT INFANTS (ELBWI)

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