Sildenafil modulates the NO pathway via prevention of NO breakdown. Our study aimed to investigate the effect of intravenous maternal sildenafil administration on cardiovascular function in FGR fetuses.

Method: Fetal sheep (0.6 gestation) underwent sterile surgery for single umbilical artery ligation (SUAL, FGR) or sham (control, AG) surgery to replicate FGR. Following recovery ewes received sildenafil (40 mg/24 hrs. I.V.) or saline until 0.83 gestation. Fetuses were euthanased for collection of aorta, carotid, femoral, pulmonary and middle cerebral artery vessels. Functional assessment of vessels was conducted (in vitro wire myography) with mediators of the NO pathway.

Results: Endothelium-independent vasodilation was significantly enhanced within cerebral and systemic arteries of FGR compared to AG offspring (p < 0.05). Maternal sildenafil treatment further increased vasodilatory capacity in cerebral arteries.

Conclusions: Cerebral arteries of FGR fetuses have an increased reactivity to NO compared to AG fetuses. Maternal sildenafil administration during gestation further increased reactivity in developing fetuses. Interestingly, both AG and FGR fetuses were similarly affected by maternal sildenafil administration.

THE EARLY ONSET RISK CALCULATOR TO EVALUATE EARLY ONSET SEPSIS IN INFANTS BORN 335 WEEKS’ GESTATION

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Background: Blood culture-proven early-onset sepsis (EOS) occurs in <0.5/1000 live-births, but >10% of newborns receive empiric antibiotics. We aimed to compare the current risk-based guideline with the Neonatal Early Onset Risk Calculator (NEORC)1 to determine if any cases of EOS in infants born >35 weeks’ gestation would be missed and if utilisation of unnecessary antibiotics could be reduced.

Method: Retrospective audit of obstetric factors and clinical signs, investigations and antibiotic treatment in infants born >35 weeks’ gestation from January-October 2016 at the Royal Women’s Hospital, a tertiary perinatal centre with >7,000 annual deliveries. The calculated NEORC score stratified infants into 3 risk groups (treat empirically, observe and evaluate, continued observation).

Results: Preliminary analysis of one calendar month included 577 infants, with blood cultures taken and empiric antibiotic treatment in infants born >35 weeks’ gestation from January-October 2016 at the Royal Women’s Hospital, a tertiary perinatal centre with >7,000 annual deliveries. The calculated NEORC score stratified infants into 3 risk groups (treat empirically, observe and evaluate, continued observation).

Conclusions: Compared with a risk-based EOS guideline, the NEORC reduced the proportion of infants born >35 weeks’ gestation treated with antibiotics, without missing any cases of EOS. Analysis will continue to include a larger inception cohort as planned.


PHYSICAL GROWTH OF NEONATES WITH COLOSTOMY: A RETROSPECTIVE AUDIT

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Background: Neonates undergoing colostomy have various morbidities that can affect physical growth.

Aim: To evaluate the two year physical growth of neonates who underwent colostomy.

Methods: Retrospective audit by going through medical records.

Results: A total of 21 neonates were included. The underlying condition was imperforate anus in 17, anorectal anomaly in 3 and Hirschsprung disease in 1. The median gestational age was 38 weeks (range 31–40 weeks). 8 were female and 13 were male. The median birth weight centile was 38 (15–62) whereas it was 34 (9–73) at 20 months of age at the time of second follow-up after stoma closure (p = 0.468). The median birth length centile was 47 (26–72) whereas it was 44.5 (36–55) at second follow-up after stoma closure (p = 0.878). The median birth head circumference centile was 34 (23–73) whereas it was 47 (34–72) at second follow-up after stoma closure (p = 0.786). The physical growth centiles were similar before and after stoma closure.

Conclusions: Physical growth of neonates undergoing colostomy was adequate in the first two years of life.

BIFIDOBACTERIUM BREVE M-16V AS A PROBIOTIC FOR PRETERM INFANTS—A STRAIN SPECIFIC SYSTEMATIC REVIEW

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Background: Bifidobacterium (B.) breve M-16 V has been used as a probiotic in preterm infants. Probiotic strain-specific data is essential to guide clinical practice.

Method: A systematic review of randomized controlled trials (RCTs) and non-RCTs of B. breve M-16 V in preterm infants was conducted. We searched the Cochrane Central Register of Controlled Trials, PubMed, EMBASE, and CINAHL databases and proceedings of Pediatric Academic Society meetings in January and September 2016.

Results: Four RCTs (N = 416) and five non-RCTs (N = 2562) of moderate to high quality were included. Meta-analysis using fixed effects model showed significant effects of B. breve M-16 V supplementation on various outcomes from non-RCTs: (1) Any necrotizing enterocolitis (NEC): 2 studies (n = 697); OR: 0.11 (95% CI: 0.02, 0.57); p = 0.009 (2) Late onset sepsis (LOS): 3 studies (n = 2452); OR: 0.56 (95% CI: 0.45, 0.71); p < 0.0001 (3) Mortality: 2 studies (n = 2319); OR: 0.61 (95% CI: 0.44, 0.84); p = 0.002 (4) Postnatal age at full feeds (PAFF) days: Mean Difference, 95% CI: 2 studies (n = 2319); −2.42 (−2.55, −2.3); p < 0.00001. Results from RCTs showed no statistically significant beneficial effects on stage 2 NEC, LOS, mortality and PAFF. There was no probiotic sepsis.

Conclusions: B. breve M-16 V has the potential to reduce the risk of NEC, LOS, PAFF, and mortality in preterm infants. Larger definitive RCTs are needed to confirm these findings.