maternal and fetal acetaminophen concentrations were compared with those observed in the literature. umbilical cord data at birth.

Results The 3 different approaches to predicted acetaminophen PK in the umbilical vein were found to yield broadly similar results. Acetaminophen exposure was similar in maternal blood compared to venous umbilical cord blood. Prediction of the median dose fraction of acetaminophen converted to its metabolites (fma) revealed higher maternal acetaminophen-glucuronide formation clearance and sulphate formation compared to that in the fetal liver (fma/glucuronide 52.2 vs 0% and fma_sulphate 30.4 vs 0.8%, respectively) and higher fraction of acetaminophen converted to the reactive metabolite N-acetyl-p-benzoquinone-imine (fma_{NAPQI} 6.5 vs 0.06%) in pregnant women compared to their fetus.

Conclusion No differences were observed in the 3 approaches for integration of placental drug transfer. Differences in acetaminophen biotransformation to its metabolites between pregnant women and their fetuses were quantitatively predicted.

Disclosure(s) Paola Mian received a Short term Minor (STM-2017) grant from the Stichting Sophia Kinderziekenhuis funds to conduct this research.

P67 IMPACT OF ENANTIOMER-SPECIFIC MATURATIONAL CHANGES IN PHARMACOKINETICS ON THE RACEMIC KETOROLAC TARGET TROUGH CONCENTRATION

Introduction Ketorolac is a racemic drug with analgesic effects specific to its S-enantiomer. This study aimed to describe enantiomer-specific maturational pharmacokinetics (PK). Simulations were performed to describe how S-ketorolac exposure in infants differs from adults, and how this affects the adult racemic analgesic trough threshold EC50 (EC50thr-adult 0.37 mg/L) in infants (EC50thr-infant) when the same S-target is applied.

Methods A one-year retrospective cohort study of all drug prescriptions, including route of administration for all children admitted to the NICU and PICU of the Erasmus MC-Sophia’s children’s hospital.

Results 1723 children with 2091 unique admissions received per admission (median [IQR]) 5 (3–10) drugs; 1 (0–2) orally and 3 (1–7) intravenously (IV). During mechanical ventilation 15% and 75% of drugs were given orally and IV, respectively. In non-ventilated patients, 27% of drugs were given orally and 60% IV. The 5 most frequently orally prescribed drugs were: vitamin K, spironolactone, oral probiotics, amphotericin B (prophylaxis) and trimethoprim.

Discussion Critically ill infants receive a considerable proportion of drugs orally. Considering that critical illness may significantly impact intestinal drug absorption, this may expose them to an increased risk of ineffective or unsafe drug therapy.

Disclosure(s) Nothing to disclose

P68 SIGNIFICANT ORAL DRUG USE IN CRITICALLY ILL CHILDREN: RATIONAL THERAPY OR A BLACK BOX?

Background The disposition of orally prescribed drugs in critically ill children may be affected critical illness in addition to age, resulting in erratic effects and safety. We aimed to study oral drug prescribing in the neonatal and pediatric intensive care unit (NICU and PICU).

Methods A one-year retrospective cohort study of all drug prescriptions, including route of administration for all children admitted to the NICU and PICU of the Erasmus MC-Sophia’s children’s hospital.

Results 1723 children with 2091 unique admissions received per admission (median [IQR]) 5 (3–10) drugs; 1 (0–2) orally and 3 (1–7) intravenously (IV). During mechanical ventilation 15% and 75% of drugs were given orally and IV, respectively. In non-ventilated patients, 27% of drugs were given orally and 60% IV. The 5 most frequently orally prescribed drugs were: vitamin K, spironolactone, oral probiotics, amphotericin B (prophylaxis) and trimethoprim.

Discussion Critically ill infants receive a considerable proportion of drugs orally. Considering that critical illness may significantly impact intestinal drug absorption, this may expose them to an increased risk of ineffective or unsafe drug therapy.

Disclosure(s) Nothing to disclose

P69 PHARMACOKINETICS OF A CONTINUOUS INFUSION OF PIPERACILLINTAZOBACTAM TO CHILDREN USING AN ELASTOMERIC PUMP (POPPEt STUDY): PILOT DATA FROM DOUBLE LUMEN CENTRAL LINES

Background Piperacillin/Tazobactam is the first-line antibiotic for the treatment of febrile neutropenia in the UK. There is
increasing interest in administration by continuous infusion in adult studies, but paediatric data is lacking. A continuous infusion, if given via an elastomeric pump could also facilitate earlier discharge from hospital.

Methods Children with an oncology/haematology diagnosis admitted to Alder Hey Children’s Hospital with febrile neutropenia, normally treated with Piperacillin/Tazobactam via elastomeric device were considered eligible for the study. Patients received 24–36 hours of intermittent dosing before continuous dosing commenced via elastomeric pump. We analysed the data from 5 patients with double lumen central lines as a pilot phase to determine if expanded recruitment to include patients with single lumen lines was possible.

Results Five patients were recruited, four of which had the continuous infusion. The mean Cmax following intermittent dosing of piperacillin and tazobactam from the lumen used for drug administration were 189.7 mg/L, 95% CI [71.7 - 307.9] and 18.5 mg/L, 95% CI [10.7, 26.3] respectively. The mean Cmax following intermittent dosing for the ‘empty’ lumen were 160.5 mg/L, 95% CI [121.6 - 199.4] for piperacillin and 13.7 mg/L, 95% CI [11.2 - 16.3] for tazobactam. The largest difference seen was on patient 002 with a concentration of piperacillin almost double that seen in the ‘empty’ lumen (429 mg/L vs 233 mg/L).

Conclusion The lumen used for drug administration has enough residual drug to influence the results, so expanding recruitment to include single lumen lines is not going to be undertaken. The study has been amended to recognise this, and recruitment will continue with double lumen central lines only.

Disclosure(s) Nothing to disclose