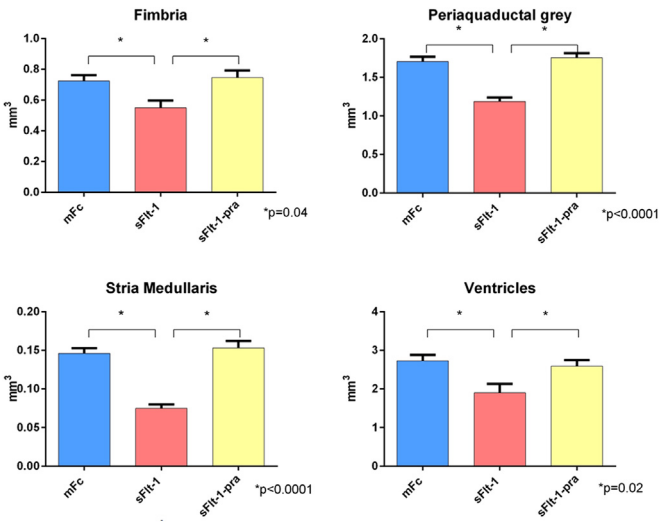

Gross volume in mm^3 for offspring brain regions which had significant loss of volume in the sFlt-1 group compared to mFc controls and pravastatin treatment group. Data presented as mean ± SEM.

38 Perinatal pharmacokinetics of azithromycin for cesarean prophylaxis

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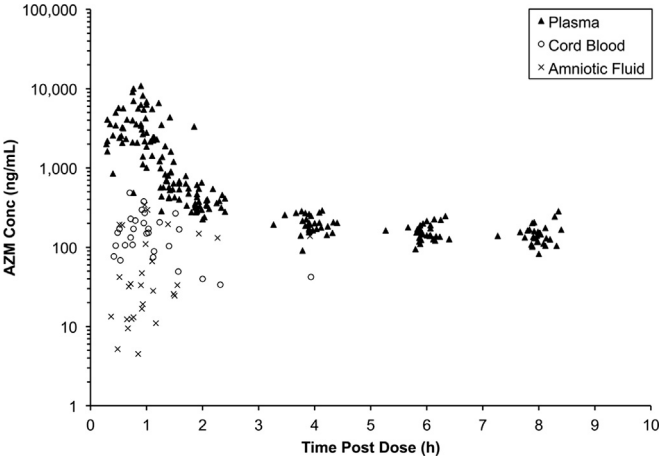
OBJECTIVE: Extended spectrum cesarean prophylaxis at cord clamp with cefazolin and azithromycin (AZI), which covers *Ureaplasma* spp, decreases post-cesarean infections. A clinical trial is underway to determine if addition of AZI to cefazolin prior to incision reduces surgical site infections. This study sought to evaluate the perinatal pharmacokinetics of AZI following a single pre-incision dose.

STUDY DESIGN: 30 women undergoing cesarean delivery were randomized to receive 500 mg of AZI IV initiated 15, 30, or 60 minutes prior to incision. Maternal plasma samples were drawn up to 8 hrs after the dose. Amniotic fluid (AF) and cord blood (CB) were collected at delivery. AZI and its added internal standard clarithromycin were extracted using a protein precipitation method. Analyte separation and detection were performed using high performance liquid chromatography and tandem mass spectrometry. The assay was linear from 2.5-5,000 ng/mL in a 50 μL sample. Plasma pharmacokinetic parameters were estimated using noncompartmental analysis.

RESULTS: The mean (SD) plasma area under the concentration-time curve ($AUC_{0-\infty}$), maximum concentration (C_{max}), and minimum concentration (C_{min}) were 6030 (2170) ng*h/mL, 4500 (2430) ng/mL, and 147 (43) ng/mL, respectively. Plasma C_{max} was reached within 1 hr and was over 2X the in vitro minimum inhibitory concentration (500-1000 ng/mL) of most *Ureaplasma* spp. The concentrations were sustained with a half-life of 6.2 hrs. The median AF concentration was 33 ng/mL at a median of 0.92 hrs post-dose. The median CB concentration was 152 ng/mL at a median of 0.95 hrs post-dose.

CONCLUSION: A single dose of AZI achieves effective and sustained maternal plasma concentrations, is rapidly transported across the placenta, and is detectable in both AF and CB. The transplacental transport indicates maternal treatment with AZI has the potential to reduce perinatal infections caused by *Ureaplasma* spp. Additional studies are underway quantifying AZI in adipose and myometrium to further define the role of AZI in cesarean prophylaxis.

Maternal plasma, cord blood, and amniotic fluid AZI concentrations following a single pre-incision dose



39 Progression of ultrasound findings of fetal syphilis following maternal treatment

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OBJECTIVE: To evaluate ultrasound findings of fetal syphilis and describe their progression after maternal treatment.

STUDY DESIGN: This is a retrospective cohort study from September 1984 to June 2011 of women diagnosed with syphilis after 18 weeks of gestation who had an ultrasound to evaluate fetal syphilis. Women not treated prior to delivery were excluded. If the ultrasound showed evidence of fetal syphilis, it was repeated weekly until resolution or delivery. Patient demographics, ultrasound findings, stage of syphilis, delivery and infant outcomes were recorded. Standard statistical analyses were performed.

RESULTS: 235 women met inclusion criteria and 73 (30%) had evidence of fetal syphilis on initial ultrasound. Abnormalities were more common in early stage disease (58%). These included hepatosplenomegaly (HSM) (81%), placentomegaly (21%), ascites (11%), polyhydramnios (11%) and abnormal MCA dopplers (32%). Polyhydramnios was the first abnormality to resolve and did so by 2.8 +/− 0.3 weeks after treatment. This was followed by resolution of ascites, placentomegaly, MCA doppler abnormalities and finally HSM. Infant outcomes were available for 142 deliveries. Overall,32(23%) were diagnosed with congenital syphilis. Congenital syphilis was more common when antenatal ultrasound abnormalities were present (49% vs.15%, $p<0.001$). However, 9(56%) of those infants were born < 4 weeks after maternal treatment. In infants who had an abnormal ultrasound but born with congenital syphilis >4 weeks after maternal treatment, HSM was the only finding still present on exam at delivery (28%).

CONCLUSION: This is the first study to describe the course of fetal syphilis after antepartum treatment. Sonographic signs of fetal syphilis confer a higher risk of congenital syphilis at delivery for all