

the current PP13 ELISA test and their existence can explain low levels of serum PP13 in women who subsequently develop preeclampsia. In this study we investigated the presence of circulating PP13 mRNA in pregnancies with physiological course of gestation.

Methods: For the testing, we developed three various real-time RT-PCR systems (exon 1–2, exon 4, exon 4-UTR) for the detection of normal PP13 mRNA and for its shorter isoforms. The presence of PP13 mRNA was analysed in plasma samples of 16 women during the first and the third trimesters of gestation.

Results: The systems were optimised to detect reliably 500, 50 and even 5 copies of placental-derived PP13 in a mixture with redundant PP13 negative RNA plasma sample derived from non-pregnant healthy individuals. However, the detection rate of PP13 mRNA in maternal plasma samples was substantially inconsistent (at the most one or two positive replicates out of 6 tested ones).

Conclusions: The early detection of PP13 mRNA in maternal plasma does not represent a suitable method to predict later development of preeclampsia. This work was supported by grant project MSM 0021620806.

P14.17

Change in the size of uterine myoma during pregnancy and its association with maternal BMI

H. Jeong¹, H. Yeo⁵, Y. Yoon¹, H. Jeon¹, H. Seol⁴, S. Hong³, M. Oh², H. Kim¹

¹Obstetrics & Gynecology Department, Korea University Ansan Hospital, Ansan, Republic of Korea; ²Obstetrics & Gynecology Department, Korea University Guro Hospital, Seoul, Republic of Korea; ³Obstetrics & Gynecology Department, Korea University Anam Hospital, Seoul, Republic of Korea; ⁴Obstetrics & Gynecology Department, Kyung Hee University East-West Neo Medical Center, Seoul, Republic of Korea; ⁵Minjun Obstetrics & Gynecology Clinic, Seoul, Republic of Korea

Objectives: To investigate the effects of pregnancy on uterine myoma during pregnancy and the association of maternal BMI with myoma.

Methods: A retrospective analysis was performed. Data was abstracted from antenatal sonographic records at Korea University Ansan Hospital, Korea. The population included 77 women in whom 106 uterine myomas were identified. The size of myoma was calculated averaging longitudinal and horizontal lengths measured in 2 dimensional plane in the 1st (10–12 weeks), the 2nd (20–23 weeks), and the 3rd (30–32 weeks) trimesters. Change in the size by more than 10 percent is defined as increase or decrease. We classified myomas into 3 groups by the time of measurement; I-the 1st and the 2nd trimesters, II-the 2nd and the 3rd trimesters, III-subsequent measurement in all the three trimesters. Group III was divided into non-obese (BMI < 25 kg/m²) and obese (BMI ≥ 25 kg/m²) subgroups. We calculated the percent change in the size and analyzed it in relation to BMI.

Results: In group I, the percent change showed increasing tendency; 28 of 54 myomas increased by 40.0 percent in average ($P < 0.001$, mean size: 5.09 cm to 5.82 cm). In group II, 24 of 70 myomas did not change and 26 of 70 myomas decreased by 22.7 percent in average ($P < 0.001$, mean size: 5.69 cm to 5.45 cm). In group III, myomas significantly increased in the 2nd trimester but did not change in the 3rd trimester in non-obese subgroup ($P < 0.05$, mean size 5.82 cm, 6.54 cm, 6.49 cm), where as it significantly increased in the 2nd trimester and decreased in the 3rd trimester in obese subgroup ($P < 0.05$, mean size: 4.74 cm, 6.19 cm, 5.11 cm). In obese subgroup, myomas changed to a greater extent.

Conclusions: About half of the myomas increased between the 1st and the 2nd trimester. Between the 2nd and the 3rd trimester, 37.1 percent of the myomas decreased and 34.3 percent of them did not change. High maternal BMI is associated with greater change in size of myoma during pregnancy.

P14.18

Fetal renal insufficiency following Valsartan and Trastuzumab in pregnancy: three case reports with different intrauterine course and outcome

J. Ritgen¹, I. Gottschalk², S. Fröhlich¹, R. Stressig¹, C. Kurbacher⁴, K. Tchatcheva³, U. Gembruch³, C. Berg^{2,3}

¹Institute of Prenatal Medicine and Human Genetics, Duesseldorf/Cologne, Germany; ²Department of Obstetrics and Gynecology, University Hospital of Cologne, Cologne, Germany; ³Department of Obstetrics and Gynecology, University Hospital of Bonn, Bonn, Germany; ⁴Institute of Gynaecological Oncology, Bonn, Germany

Background: Some drugs are known for their fetal nephrotoxicity and are therefore contraindicated during pregnancy. However for many innovative drugs only scant data exist on the effect on the fetus and on their use during pregnancy. We report on three cases of drug-induced renal insufficiency with different intrauterine course and outcome.

Patients and drugs:

Case 1: A pregnant woman with breast cancer received a neoadjuvant trastuzumab (Herceptin®) therapy from 16 weeks onward. Fetal renal insufficiency with anhydramnios and missing visualisation of the fetal bladder developed at 21 weeks. After discontinuation of Trastuzumab and repeated instillation of amniotic fluid, restoration of renal function was noted at 24 weeks. The further course of pregnancy was complicated by intrauterine growth restriction. After caesarean section at 32 weeks the postnatal development and the renal function were normal. **Case 2 and 3** both received valsartan during pregnancy (Diovan® and Cordinate®). In Case 2 fetal renal insufficiency with anhydramnios was observed at 21 weeks. After discontinuation of Valsartan spontaneous resolution of fetal renal function was noted and a healthy male neonate with normal renal function was born at term. In case 3 the Valsartan-therapy was unknown to the attending physicians. At 32 weeks of gestation she presented with anhydramnios and preterm labour. The kidneys were massively enlarged and a biochemical examination of fetal cord blood confirmed terminal renal insufficiency with elevated cystatin C and beta 2 microglobulin. Following preterm delivery the infant requires dialysis.

Conclusion: During pregnancy the application of Valsartan and Trastuzumab should be avoided if possible. In pregnancies exposed to Trastuzumab or Valsartan the treatment should be discontinued and the fetus should be closely monitored with particular attention to the amniotic fluid volume as this reflects the fetal renal function.

P14.19

Diagnosis of primary megaureter with the aid of 3D ultrasonography: a case report

K. Ulker¹, I. Temur¹, M. Karaca¹, K. Cecen², A. Gul¹

¹Obstetrics and Gynecology Department, Kafkas University, Kars, Turkey; ²Urology Department, Kafkas University, Kars, Turkey

Ureters more than 7 mm in diameter are called megaureters. Prenatal diagnosis of them are generally put with the aid of 2 dimensional (2D) ultrasonography (USG). In this report a case of primary megaureter is presented and the topic is discussed in the view of the literature. A 22 year old, gravida 3, para 2, third trimester pregnant (36 weeks, 2 days) woman was referred to our tertiary center from a secondary center hospital, with the diagnosis of fetal renal calyceal dilatation. In the study of fetal urinary system, no pathological finding was observed in the left fetal kidney (with a 37 × 14 mm of longitudinal and transvers distance), left ureter (with a diameter of 1.83 mm), urinary bladder and the urethra. But the right renal calyx was dilated with the measurements of 16 × 9, 6 mm, in transvers section. The right kidney longitudinal and transvers distance measurements were as 53 × 28 mm, respectively. The dilatation was continuous down to the ureterovesical junction. The right ureter was dilated from

just above the junction up to the renal pelvis with a diameter of 8.4 mm. 2D USG showed the renal calyceal dilatation (Figure 1), but the ureteral dilatation was difficult to identify because of the liquid containing image of the fetal intestines. With the aid of the 3D/4D USG view the insertion side of the right ureter in to the fetal urinary bladder was easily identified and measurement of the diameter done (Figure 1). Postnatal follow of the neonate showed no progression of the megaureter and hydroureteronephrosis.

Supporting information can be found in the online version of this abstract.

Right: 3D image of the right megaureter (> 7 mm) Left: 3D image of the normal left ureter.

P14.20

Prenatal diagnosis of a large axillary cystic lymphangioma

S. Nam, K. Kil, Y. Lee

Obstetrics, St Mary's Hospital, Seoul, Republic of Korea

Cystic lymphangioma is rare and incidence is estimated 1:6,000 pregnancies. Axillary lymphangiomas account for approximately 10% of all lymphangiomas and very few has been reported and diagnosed prenatally, so prenatal diagnosis is important for a prompt and appropriate management. We report a case of prenatal assessment of axillary cystic lymphangioma by 2D and 3D ultrasonography. She had successful vaginal delivery without any birth complication. Prenatal diagnosis is important for a prompt and appropriate management. Planned and supportive delivery should be performed.

Supporting information can be found in the online version of this abstract.

P15: CNS II: FETAL BRAIN ANOMALIES

P15.01

The development of spina bifida in a rat model

H. Wong^{1,2}, J. St. John², A. Mackay-Sim²

¹*Australian Women's Ultrasound Centre, Brisbane, QLD, Australia*; ²*Eskitis Institute, Griffith University, Brisbane, QLD, Australia*

Objectives: To describe and compare the development of spina bifida and normal embryonic spinal development on ultrasound and MRI in a rat model.

Methods: Time-dated pregnant rats were given a known teratogen for spina bifida during the time of embryonic development during pregnancy. The rats were sacrificed serially during pregnancy and at term. The appearances of the embryonic spine on ultrasound and MRI imaging were compared to those from pregnant rats that were not exposed to the teratogen.

Results: 171 embryos exposed to the teratogen were compared to 165 embryos not exposed to the teratogen. The appearance of normal spine and spina bifida in the rat embryos on serial ultrasound and MRI imaging will be presented.

Conclusions: The development of spina bifida could be assessed serially on ultrasound and MRI in a rat model.

P15.02

First embryonic movements are executed rhythmically

J. I. de Vries¹, R. H. Felt¹, E. J. Mulder², M. A. Taverne³

¹*Obstetrics and Gynaecology, VUumc, Amsterdam, Netherlands*; ²*Perinatology and Gynaecology, UMCU, Utrecht, Netherlands*; ³*Farm Animal Health, Faculty of Veterinary Medicine, Utrecht, Netherlands*

Objectives: Assessment of motility before birth can be used to evaluate the integrity of the young nervous system. The earliest form of embryonic motility, sideways bending (SB) of head and/or trunk, can be visualised sonographically in the human and guinea pig (1,2). Other species show early embryonic motility at rhythmical cycles. We studied the distribution of SB in human and guinea pig embryos prior to co-occurrence of more complex movements like general movements.

Methods: Sonographic 15-min recordings were made at 5 and 6 wks conceptional age in 18 human embryos of uncomplicated IVF pregnancies (term 38wks) and in 20 guinea pig embryos at 2–4 day intervals between 3 wk+4 d and 4 wk+0 d (term 6 wk+5 d). Interval durations between successive SBs were labelled as macro (≥ 10 s), micro (< 10 s), or total.

Results: Median total, macro and micro intervals in human were 52 s (range: 1–164 s), 60 s (range: 10–164 s), and 2 s (range: 1–9 s), respectively; in the guinea pig 28 s (range 1–288 s), 38 s (range: 10–288 s) and 5 s (range: 1–9 s). In both species the duration of macro-intervals showed a tendency to decrease, while the frequency of micro-intervals increased.

Conclusions: Earliest embryonic motility in human and guinea pig is performed rhythmically about every half to whole minute, as in other species. Within the short timeframe without other emerging movements, small changes in macro- and micro-intervals suggest a gradual transition to the period when complex general movements appear at more varying intervals.

1. Luechinger *et al* *Ped Research* 2008;63:191–5.

2. Kan *et al* *Physiology Behaviour* 2009;98:338–44.

P15.03

Early visualization and measurement of the pericallosal artery: an indirect sign of the development of the corpus callosum

M. Pati, E. Bertucci, C. Cani, S. Latella, V. Fenu, V. Mazza

Prenatal Medicine Unit, Modena, Italy

Objectives: To demonstrate the visualization, directionality and length of the pericallosal artery (PCA) in fetuses between 12 and 20 weeks of gestational age by High definition flow Power-Doppler.

Methods: The study group consisted of 54 pregnant women who attended our ultrasound unit. Transabdominal and/or transvaginal ultrasound was performed to obtain the optimal angle of a midsagittal section. High definition flow Power-Doppler was used to visualize the PCA, the PRF was regulated by its optimal colour signal. We observed the direction and length of the PCA. The mean average and confidence intervals for the length of PCA were calculated for each week of gestation between the 12th and 20th week.

Results: We were able to visualize the PCA in 46 fetuses with a biparietal diameter (BPD) of at least 20 mm. An apparently linear association was found between the length of the PCA, the gestational age of the fetus, and the BPD. The PCA appeared to be a semicircular vessel with an inferoposterior direction.

Conclusions: Our data showed an accuracy rate of 100% for the visualization of the PCA with a BPD equal or greater to 20 mm. The presence of a semicircular vessel with an inferoposterior direction and a normal length of the PCA after the 12th week of gestation should exclude a possible disorder of prosencephalic midline development.