VP24.04
The delayed fetal neurological maturation in women with threatened preterm labour

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Objectives: The uterine activity separated from maternal abdominal signal could contribute to better diagnosing of threatened preterm birth. This signal is being obtained via equipment for fetal non-invasive electrocardiography. The detection of acceleration capacity (AC) and deceleration capacity (DC) variables reflects the fetal neurological development.

Methods: Totally examined 192 pregnant women. The US cervicometry was performed at 16 weeks of gestation. The patients with normal cervical length (> 30 mm) were enrolled in Group I (n = 34). The US investigation of cervical length and fetal AC/DC detection via transabdominal non-invasive electrocardiography at 26, 32, and 38 weeks of gestation were used in Group II (n = 84). The investigation of uterine activity was additionally performed in women in Group III (n = 74). Fetal cardio signals and maternal uterine activity were obtained via non-invasive fetal electrocardiography using Cardiolab Babycard equipment (the "KhAI Medica" Scientific Research centre, Ukraine). The monitoring of fetal AC/DC was also performed in Group I. The results were analysed with an ANOVA test.

Results: The level of AC/DC was minimal in all groups at 26 weeks. This fact reflects the immaturity of autonomic regulation. But later on, the decreased values of AC/DC were found in Group II and Group III at 32 and 38 weeks of gestation. Thus, the threatened preterm delivery has a negative projection on fetal neurodevelopment. The sensitivity and the specificity of the threatened preterm labour detection were in Group II and Group III respectively: 86.49% (95% CI – 76.55% to 93.32%) and 58.82% (95% CI – 40.70% to 75.35%); 98.46% (95% CI – 91.72% to 99.96%) and 90.91% (95 % CI – 58.72% to 99.77%). The use of uterine activity has improved the accuracy of threatened preterm labour diagnosing.

Conclusions: The application of uterine activity extracted from electrophysiological maternal abdominal signal contributed to better diagnosing of the threatened preterm labour. Fetal neurodevelopment is retarded in case of the threatened preterm birth.

VP24.05
Prenatal diagnosis and postnatal pathohistological verification of mature teratoma

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Brain tumours diagnosed in fetal period are very rare incidents and the majority of them are represented by teratoma. As a rule, massive teratomas have a poor prognosis. We report a case of huge intracranial tumour with compressive mass effect without obstructive hydrocephalus at 32 weeks of gestation. For the second opinion the pregnant woman from one of the regions was referred to our clinic to a medical expert with suspicious of schisencephaly. Fetal neurosonography revealed fairly multiseptate cystic mass which shifted the left hemisphere up and to the right without obstruction of the CFS. Next the fetal MRI was performed and our diagnosis was mature teratoma (differential diagnosis supratentorial arachnoid cyst). Family decided to continue the pregnancy. At the 4th month the head circumference of the child grew very rapidly and as a result he developed the hydrocephalus. Baby undergone the operation and our diagnosis – mature teratoma was pathohystologically confirmed. Nowadays the baby is quite well and under the supervision of the doctor. Although the vast majority of teratomas has a poor prognosis in our case the outcome was favourable. Pathohystological verification is a very important tool that helps to confirm the diagnosis done by MRI.

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

VP24.06
Unilateral microphthalmia and CNS-associated anomalies: management and prognosis

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We present the case of a fetus with a normal nuchal scan at 13 weeks with low risk for chromosomal abnormalities and then diagnosed with microphtalmia at the time of the anomaly scan at 22 weeks with no other cerebral or extracerebral abnormalities except one left ventricular hyperechogenic focus. After counselling about the future visual and esthetic disturbances and the possible association with several fetal syndromes the mother decided for continuation of the pregnancy and follow-up, the first step recommended being amniocentesis for arrayCGH. At 24 weeks we received the result of a normal karyiotype. In the 3rd trimester, at 28+5 weeks of pregnancy scan we noticed more cerebral anomalies: a much smaller left orbit with cataract and obvious facial dysmorphism, a nonlinear cerebral falx at the level of the anterior complex that was displaced towards left, high cerebral lateral ventricles inequality with the larger ventricle being the left (9.8mm), an appearance and suspicion of smooth cerebral surface and polyhydramnios with normal fetal growth and no other abnormalities. The mother declines other genetic tests (WES) and accepted to perform fetal cerebral MRI at 32 weeks that confirmed the US abnormalities described earlier plus gyration abnormalities and severe hypoplasia of the left frontal lobe and left ophthalmic nerve. Following this result she decided for TOP.

VP24.07
Antenatal diagnosis of schizencephaly at 36 weeks

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Schizencephaly is a rare disorder of the central nervous system caused by an abnormal neuronal migration, characterised by one or more fluid-filled clefts in the cerebral hemisphere, with communication between the subarachnoid space laterally and the ventricular system medially. It occurs more frequently in younger mothers. It can be classified as close lip (type I) or open lip (type II) depending on whether the tissue on either side of cleft is in contact or separated. The degree of impairment depends on the location of the cleft, whether it is uni or bilateral, whether is type 1 or 2 and whether there are associated malformations. Antenatal diagnosis of schizencephaly before 28 weeks is very uncommon. 20-years-old woman, with prior history of first term miscarriage, in 36+5 week pregnancy, referred to our centre from a private consultation for suspected fetal growth restriction that was confirmed with ultrasound. During the exploration it was evident an interruption of