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SUMMARIES OF THE 13TH NATIONAL CONGRESS OF PERINATAL MEDICINE CLUJ-NAPOCA, ROMANIA (26-28 SEPTEMBER 2019)

The incidence of congenital and chromosomal anomalies is low in newbornes from *in vitro* fertilization

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Introduction. Due to demographic changes, such as increasing maternal age and improving technology in assisted reproduction, more and more children will be born through *in vitro* fertilization (IVF). Until now, the existing data have not showen an increase in the incidence of congenital anomalies and chromosomal anomalies in these children. **Materials and method.** We performed a retrospective study on 2,471 women who performed IVF in a private centre during 2011-2017. The number of births in this group was 757 (30.65%). All pregnancies were obtained by transfer of fresh embryos. The purpose of the study was to establish the incidence of congenital anomalies and chromosomal abnormalities in IVF-born children. The data were statistically analyzed using SPSS 20. **Results.** Of the total number of births, 75.8% were single pregnancies, 22.9% were twin pregnancies and 1.3% were triple pregnancies. The mean age of the patients was 35.7 years old. Newborns were 48.3% boys and 51.7% girls. The incidence of congenital anomalies was 2.1% and chromosomal anomalies were 0.5%. Of these, brain abnormalities were 5%, cardiovascular 20%, gastrointestinal 25%, genitourinary 15%, musculoskeletal 5%, chromosomal abnormalities 20%, labioschizis 5%, and plurimalformations 5%. The rate of congenital malformations in IVF children was 1.9%, and those obtained by ICSI were 2.3%, with no statistical significance. The likelihood of congenital malformations increases with age, over 35 years old, with the male factor and low ovarian reserve. **Conclusions.** The low number of congenital malformations and chromosomal abnormalities after *in vitro* fertilization makes this procedure a useful method of increasing births rate.

Keywords: IVF, congenital malformations, chromosomal abnormalities

Traps of diagnosis and evolution in maternal and fetal infections

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Obstetric infections continue to be a major challenge, although new elements of pathophysiology are emerging. In this area, we continue to encounter cases with serious evolution. It is becoming increasingly obvious that this area needs to be understood and investigated as a whole, mother and fetus. All the manifestations, even the insignificant ones, must be considered, both in the mother and in the fetus. A very common starting point must be the appearance of uterine contractions. On the other hand, attention should be paid to fetal manifestations. Suggestive elements of fetal disturbance may be signs of fetal inflammatory syndrome.

Keywords: pregnancy, infection, management

Maternal-fetal management in trombophilia-related and placenta-mediated pregnancy complications

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It is widely accepted that thrombophilia in pregnancy greatly increases the risk of venous thromboembolism. Pregnancy complications arise, at least partly, from placental insufficiency. Any change in the functioning of the gestational transient biological system, such as inherited or acquired thrombophilia, might lead to placental insufficiency. In this research we included 64 pregnant women with trombophilia and 70 cases of non-trombophilic pregnant women, with or without PMPC, over a two-year period. The purpose of this multicenter case-control study is to analyze the maternal-fetal management options in obstetric thrombophilia, the impact of this pathology on the placental structure, and the possible correlations with placenta-mediated pregnancy complications. Maternal-fetal management in obstetric thrombophilia means preconceptional or early diagnosis, prevention of pregnancy morbidity, specific therapy as quickly as possible, and fetal systematic surveilance to identify the possible occurrence of placenta-mediated pregnancy complications.

Keywords: obstetric trombophilia, maternal-fetal interface, acetylsalicylic acid, low molecular weight heparin, folic acid

Hematological profile of small for gestational age neonates

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Introduction. Small for gestational age (SGA) infants, with a birth weight and/or height more than 2 standard deviations under the mean for gestational age, have a higher incidence of both early-onset neutropenia and thrombocytopenia. **Aim.** To determine whether being born SGA is an independent risk factor for neonatal neutropenia and thrombocytopenia. **Materials and method.** A 3-year retrospective randomized case-control study was conducted at the Neonatology Department, from January 1st 2014 to December 31st 2016. The study group consisted of 170 SGA newborns matched 1:1 with 170 appropriate for gestational age (AGA) neonates, representing the control group. Venous blood samples obtained in the first three days after birth in all neonates were analyzed. Neutropenia and thrombocytopenia were defined as an absolute neutrophil count <1.5×109/L and platelet count less than 150×103/L, respectively. **Results.** Both neutropenia and thrombocytopenia were more prevalent among SGA neonates (5.8% and 4.7%, respectively) compared to AGA controls (0.5% and 0%). The patients from the study group with underlying chronic fetal hypoxia, such as that caused by pregnancy-induced hypertension, were most affected. As such, 33.3% of these patients were neutropenic and 27.7% were thrombocytopenic. **Conclusions.** Chronic fetal hypoxia as an underlying cause of SGA is an important risk factor in the development of both neutropenia and thrombocytopenia. SGA contributes to the reduction of neutrophil and platelet count in an additive way.

Keywords: small for gestational age, neonatal neutropenia, neonatal thrombocytopenia

Complex vascular malformations: prenatal and postnatal diagnosis

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Background. Vascular malformations, regardless of their location, represent a heterogeneous group of disorders that can affect many organs and systems and may sometimes be lethal. Arteriovenous malformations (AVM) are vascular anomalies described as a vascular tangle in which abnormal connections between the arterial and venous systems are present, with capillary bed shunting, which leads to a shunt from the high-pressure arterial system to the low-pressure venous system. The vascular malformations appear during the morphological development of the vascular system and they are present at birth. Their real incidence is unknown. Clinically, they may start with severe symptoms or may be asymptomatic. They can be isolated or syndromic. The diagnosis requires complex imagistic evaluations: ultrasound, MRI, CT scans, angio-CT. **Materials and method.** In this paper, we approach some aspects of the prenatal and postnatal diagnosis of some AVM and the therapeutic options. We present two cases of AVM. The first one is with cerebral location: Galen fistula with congestive heart failure onset – although rare, it is the most frequent vascular malformation diagnosed in the neonatal period. The second one is with hepatic location: an assembly of abnormal vascular connections which directs the blood into portal vein, hepatic artery and hepatic vein and onset as fetal ascites. Complex imaging evaluations were necessary: ultrasound exam, MRI, angio-CT scans. The stabilization of the two patients included correction of the hepatic, cardiac and renal failure and of the associated coagulation disorders. Endovascular embolisation and liver transplantation, respectively, have been done in specialized centers of neurosurgery and pediatric hepatobiliary surgery. **Conclusions.** Solving these cases requires the existence of a multidisciplinary team (obstetrician, neonatologist, interventional radiologist) for establishing the diagnosis, but also high specialized surgery services.

Keywords: arteriovenous malformation, congestive heart failure, fetal ascites

Implications of early enteral nutrition in the recovery of the newborn from NICU

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Introduction. Enteral nutrition represents the preferred path of nutritional therapy due to early implications, respectively avoiding complications such as total parenteral nutrition, as well as the late ones – late neurodevelopment outcome. The aim of early enteral nutrition is to ensure proper growth and development and to avoid nutritional complications. **Objective.** The authors propose a comparative analysis of the weight gain, the neurodevelopmental status correlated with the nutritional principles and the nutritional contribution from the early neonatal period on groups of diseases. **Results and discussion.** The indications of enteral nutrition are disorders of digestion and absorption, chronic malnutrition due to non-organic insufficiency, starvation, and congenital metabolic disorders. The determination of the caloric and hydric needs depends on the category of newborn, but also on the associated pathology. Increased attention should be paid to protein intake at term birth (2-2.5 g/kgc/day) and to very low birth weigth (VLBW) and extremely low birth weigth (ELBW) – 3.5-4 g/kgc/day. The most frequently used modalities of eneteral feeding (oro-gastric gavage, gastrostoma, jejuno-stoma) are chosen according to the gestational age, pathology and digestive tolerance. **Conclusions.** Enteral nutrition is used in neonates from the Neonatal Intensive Care Unit (NICU) with severe conditions, in which enteral feeding is not indicated. It can be initiated early regardless of gestational age, but only when the gastrointestinal functionality is present.

Keywords: enteral nutrition, premature newborn, digestive complications

Indications and practical notions of non-invasive ventilation in respiratory pathology of premature newborn

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Introduction. Non-invasive ventilation is the most frequently used method of respiratory therapy in the premature newborn in both neonatal intensive care units and in the delivery room, due to good long-term prognosis. **Objective.** The authors propose a review of the most frequently used non-invasive means of ventilation, by categories of premature newborns, especially in the Neonatal Intensive Care Unit. **Results and discussion.** The morphofunctional features of the respiratory system, in this age category, implicitly the deficiency of surfactant that evolves into alveolar collapse and extensive areas of atelectasis, represent an additional argument for the early use of non-invasive ventilation. Depending on the pathology present, the nasal CPAP is used in several ways: at low level (2-3 cmH_2O) to maintain lung volume, especially in very low birth weight newborns (VLBW), at medium level (4-7 cmH_2O) for lung volume increase, respiratory distress, stabilization of atelectasis areas, and at very high levels (8-14 cmH_2O) to prevent alveolar or even bronchial collapse, obstruction and very low pulmonary compliance, improved respiration and gas exchange. **Conclusions.** Non-invasive ventilation is a modern method of treatment in neonatal intensive care, with implications in reducing mechanical ventilation, lowering the risk of infections.

Keywords: non-invasive mechanical ventilation, premature newborn, CPAP

Relationship between maternal normal nutritional health and fetal development

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Nutritional status is the most important intrauterine environmental factor which interferes with fetal development and genome. That is why nutrition causes both short- and long-term consequences for the fetus and later adult. Besides the involvement in obstetrical complications such as intrauterine growth restriction, preeclampsia and gestational diabetes, alterations in maternal nutrition generate intrauterine fetal programming, according to Barkes's theory of "fetal origins of adult diseases". Changes in fetal nutrition and endocrine status cause changes in developmental adaptations, with permanent alterations of the structure, physiology and metabolism of the offspring, which predispose to metabolic, endocrine and cardiovascular diseases in adulthood. Undernutrition in gestation causes reduction in placental circulation and subsequently in fetal growth. Fetal growth is very vulnerable to dietary deficiency of nutrients such as proteins and micronutrients during preimplantation and rapid placental development. Placental insufficiency in also linked to undernutrition, through the involvement of nutritional status in normal placentation. Overnutrition, on the other hand, in obese and overweight women resulted from increased intake of energy and proteins, is associated with a high fetal and maternal morbidity and with neonatal mortality. Maternal obesity before or during gestation associates a wide range of pathologies, from preeclampsia and intrauterine growth restriction to gestational diabetes and macrosomia. All these alterations have long-term consequences, through a proinflammatory status, causing endocrine dysfunction and metabolic imprinting. In conclusion, both undernutrition and overnutrition represent important comorbidities in pregnancy, a healthy nutritional status of the mother being crucial to normal fetal development.

Keywords: gestational diabetes, preeclampsia, maternal obesity

Morphogenesis of the human brain in the embryonic period assessed *in vitro* by 7.04 Tesla micro-MRI

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Introduction. Our goal was to assess the morphogenesis of the human brain in the embryonic period of development by micro-magnetic resonance imaging. This is a morphological research method which has proven its adequacy in studies of human embryos. **Materials and method.** A descriptive multimodal study of the developing brain of five embryos at different ages was performed. The subjects correspond to Carnegie stages 12 (CRL=4.5 mm), 13 (CRL=7 mm), 16 (CRL=12 mm), 21 (CRL=21 mm), and 23 (CRL=32 mm). They were anatomically examined and assessed by magnetic resonance using a Bruker Biospec 7.04 Tesla scanner (Eintlingen, Germany). **Results.** We describe the morphological characteristics of the embryonic brain. The increased spatial resolution of 27 μm/voxel makes possible the acquisition of high-quality images. Accurate details of the embryonic brain are reported. The study includes only five embryos studied *in vitro*, but they are representative for the fourth, fifth, sixth, seventh and eighth weeks of gestation. **Conclusions.** Understanding organ morphogenesis gives insights into the mechanisms of congenital anomalies development. The micro-magnetic resonance imaging is a powerful method for obtaining detailed morphological images of the developing brain.

Keywords: human embryo, developing brain, descriptive embryology, microscopic MRI

Soluble form of vasculo-endothelial growth factor – the bad, the good and the ugly face in the first-trimester pregnancy

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Introduction. The incidence of embryonic demise is 25%. Complications of the first trimester pregnancy are a current health problem. The etiology of the embryonic demise is multifactorial, with chromosomal abnormalities being the most common (40%). In prenatal monitoring, it is desirable to increase the effectiveness of screening methods and improve diagnostic methods for first-trimester pregnancies whose outcome can be reserved. **Materials and method.** The paper is a prospective case-control analysis that took place at the "Dominic Stanca" Clinic of Obstetrics and Gynecology in Cluj-Napoca between 2015 and 2017, and comprised two groups of patients: 81 patients with first-trimester pregnany in evolution and 89 of patients with a potentially reserved outcome pregnancy, both groups having amenorrhea between 6 and 11 weeks. Endovaginal ultrasounds were performed to assess the distance between the yolk sac and the embryo (DYSE), and venous blood was harvested for serum dosing of the soluble vasculo-endothelial growth factor (sFlt-1). **Results.** Significant statistical differences were observed between the serum level of the serological follow-up observed in the two groups, respectively a significantly lower serum level in the reserved outcome pregnancies compared to the favorable ones ($p<0.001$). **Conclusions.** The identification of low serum levels of sFlt-1 followed in this study can be considered as a screening prediction test of potentially reserved outcome pregnancies.

Keywords: first trimester, ultrasonography, yolk sac

Fetal adnexal tumors: case report

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The umbilical cord and placenta may be the site of tumor development, sometimes jeopardizing the physiological development of the fetus. The umbilical cord becomes detectable on ultrasound from 7-9 weeks of gestation, initially as a thickened and straight structure, which increases in length and acquires a spiral shape. Umbilical cord cysts are rare abnormalities detected incidentally during routine ultrasounds. These can be classified as true cysts or pseudocysts, the final diagnosis being represented by the histopathological examination, which describes an epithelial layer in the case of true cysts. Pseudocysts are more frequently associated with trisomy 18 and 13, the risk of malformations being higher if the lesion is multiple, persists after 12 weeks of amenorrhea if the localization is paraxial; at the fetal or placental insertion of the cord. The placenta may also present various tumors. Subchorionic cysts have a 5-7% incidence, arising on the fetal placental face as anechoic images without Doppler signal. It is considered that their localization near the placental cord insertion site (PCIS) can result in intrauterine growth restriction. Other placental tumors include echogenic cystic lesions, placental lakes, chorioangiomas, hydatiform moles. The antenatal diagnosis should include investigations aimed at detecting the possible association with chromosomal abnormalities. Thus, we present the case of a 29-year-old primiparous, which, at 12 weeks of amenorrhea, it was detected a 2.5-cm diameter cyst located near the PCIS, increasing in dimensions up to 5 cm diameter at 16 weeks of amenorrhea, then having a steady evolution. The fetal development has not been affected, the histopathological examination describing the lesion as a subchorionic cyst.

Keywords: placental cyst, umbilical cord cyst

Assessment of growth and fetal well-being during the third trimester of pregnancy

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Normal fetal growth depends on a complex combination of genetic, social, constitutional and environmental factors. Intrauterine growth restriction (IUGR) refers to a condition in which a fetus is unable to achieve its genetically determined potential size, and represents an important cause of fetal and neonatal morbidity and mortality. An IUGR is a clinical definition and applies to neonates born with clinical features of malnutrition and *in utero* growth retardation, irrespective of their birth weight percentile. These infants have many acute neonatal problems which include perinatal asphyxia, hypothermia, hypoglycemia and polycythemia. The likely long-term complications include growth retardation, major and subtle neurodevelopmental handicaps and increased predisposition to a variety of chronic diseases, such as hypertension/cardiovascular diseases, dyslipidemia, obesity, insulin resistance/diabetes, and other metabolic syndromes in adulthood. The incidence of IUGR differs among countries, populations and races, and increases with decreasing gestational age. IUGR is a complex and multifactorial disorder, being the result of maternal, placental, fetal or genetic factors and also the result of a combination of any of these factors. At present, there is no effective treatment to reverse the course of IUGR except delivery. Therefore, the prevention is even more important. The goal of antenatal monitoring is the early detection of IUGR, so that antenatal management can be optimized for a better neonatal outcome. The IUGR fetus needs an early diagnosis and management because they have both short-term and long-term complications, which make them high-risk neonates.

Keywords: normal fetal growth, intrauterine growth restriction, antenatal monitoring

Venous thromboembolism in pregnancy: a specific reproductive health risk

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The risk of venous thromboembolism (VTE) in women during pregnancy and the immediate postnatal period is substantially higher than in non-pregnant women of the same age. However, the absolute risk remains low, being estimated at around one to two in 1000 pregnancies. There are some physiologic and anatomic pregnancy changes that increase the risk of thromboembolism, including hypercoagulability, increased venous stasis, decreased venous outflow, compression of the inferior vena cava and pelvic veins by the enlarging uterus, and decreased mobility. It is well known that during pregnancy there is a switch in the global haemostatic balance towards a hypercoagulable state (plasma levels of coagulation factors, fibrinogen, Von Willebrand factor and other markers of thrombin generation are increased in pregnancy), a mechanism which protects against excessive bleeding during birth. The reported incidence of VTE during pregnancy is controversially. It has been suggested that the incidence is roughly similar across the three trimesters. Recent data suggested that the risk may in fact increase exponentially across the duration of the pregnancy. When deep vein thrombosis (DVT) occurs during pregnancy, it is more likely to involve the left lower extremity and to be more proximal, involving the iliac and iliofemoral veins, in comparison with non-pregnant populations. This distribution has been attributed to increased venous stasis in the left leg related to compression of the left iliac vein by the right iliac artery (May-Thurner anatomy), coupled with compression of the vena cava by the gravid uterus. The most important individual risk factor for VTE in pregnancy is a personal history of thrombosis. In women who had a previous thrombosis in pregnancy, the risk of VTE increases considerably in subsequent pregnancies if antenatal thromboprophylaxis is not used, with an estimated increased risk of recurrence of three- to four-fold. Another important individual risk factor for VTE in pregnancy is the presence of an inherited or acquired thrombophilia (a condition that predisposes individuals to developing thromboses). Other pregnancy-related factors shown to increase the risk of pregnancy-related VTE include multiple gestation, preeclampsia, prolonged labour, and emergency caesarean section. There is currently broad agreement that women should be assessed for VTE risk preconception and again during pregnancy in order to guide an appropriate VTE thromboprophylaxis according to the specific individual risk assessment.

Keywords: thrombosis, thromboembolism, hypercoagulable state

Preventing prematurity through emergency cervical cerclaje – clinical cases

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Introduction. The cervical cerclage appeared as a technique in the years 1955-1957 and was expanded in the global obstetric practice of the 1960s as an objective to prevent premature birth. Cervical insufficiency plays the primary role in preterm birth, and the incidence of this entity is estimated at 1/500 births. Transvaginal cerclage techniques have not changed radically over the years. The emergency cerclage aims to provide an additional chance to the group at risk of preterm birth to extend the duration of intrauterine development of the fetus, and combined with various drug therapies increases the survival rate of newborns. **Objective.** Preventing premature birth and improving prenatal diagnosis, as well as improving the technique of suturing in the case of emergency surgery and elaborating some recommendations. **Materials and method.** The technique of suturing the cervix in the emergency cerclage was performed following the procedure of the Australian author McDonald (1957). Five patients with dilated cervix ≤4 cm, lack of regular uterine contractions established by cardiotocography, with live fetuses and intact amniotic sac confirmed by ultrasound were investigated. **Results.** All children were born alive and survived after birth, of which two premature births and three term births, and the duration of pregnancy ranged from 6 to 10 weeks after procedure. In patients with emergency surgery no intrauterine infection – chorioamnionitis or cervicitis type was developed. Also, no other obstetric complications were observed, such as severe lacerations of the cervix, cervical stenosis, amniotic sac rupture during the suturing procedure, genital bleeding, etc. **Conclusions.** Prenatal ultrasound diagnosis, as well as the investigation of personal history and risk factors can reduce the number of patients requiring emergency surgery and can provide optimal time and conditions for preventive surgery and the selection of patients for cervical cerclage.

Keywords: emergency cerclage, dilated cervix ≤4 cm, intact amniotic pouch

Infertility of uterine cause evaluated ultrasound

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Introduction. Female infertility can be caused by any type of anomalies: cervical, uterine/endometrial, peritoneal, ovarian. The endometrium is a component of the female reproductive system that transforms under the action of hormones and undergoes rhythmic functional changes in response to ovarian changes. The physiological changes of the endometrium are directed so as to create optimal conditions for implanting the fertilized egg at the right time. The uterus is the place of growth of the pregnancy, and the uterine factors that can compromise the female fertility are: malformations of the uterine body, endometrial polyps, intrauterine synechiae, foreign bodies, fibromas. The ultrasound examination can evaluate and diagnose a large majority of these factors listed. **Materials and method.** Ultrasound measurement of the endometrium is now an indispensable component of monitoring in human reproductive technologies. The thickness of the endometrium can be assessed with the help of the endovaginal ultrasound, on the sagittal section. Transvaginal ultrasound is superior to transabdominal ultrasound due to the use of the high frequency transducer with high resolution. **Results.** Uterine lesions such as myomas, polyps, foreign bodies, malformations, etc. have certain ultrasonographic features that can be recognized on examination with an increased sensitivity and specificity rate, which allows the correct and timely diagnosis for proper medical-surgical behavior or to determine the cause of female infertility related to the uterus. **Conclusions.** Pathological changes of the uterus, associated with the endometrial ones, may result in poor reproductive performance. Ultrasound evaluation of the endometrium and uterine body allowed progress in the treatment of infertility.

Keywords: uterus, endometrium, assisted human reproduction

Epidemiological aspects in very early premature birth (less than 32 weeks) – correlations with prognostics

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Introduction. Premature birth is a major public health issue worldwide and is associated with increased neonatal morbidity. The highest morbidity is associated with premature birth (under 32 weeks of gestation). We aimed to evaluate the impact of risk factors upon this group. **Materials and method.** We evaluated the neonates under 32 weeks of gestation delivered in the maternity of the Sibiu County Emergency Clinical Hospital during 2010 and 2017. We evaluated the anthropometric data, social background, gestation, parity, mother age, spontaneous/ART pregnancy, education level, preexisting and pregnancy pathology, foetus presentation, vaginal or caesarean delivery etc. **Results.** During the study, 649 very premature newborns were delivered and evaluated. Of these, 57.9% were males and 42.1% were females. The gestational age at birth was between 22 and 32 weeks of gestation. The complete corticotherapy for respiratory distress profilaxy was performed in 26% of cases. The most frequent associated maternal pathologies were premature preterm rupture of membranes and cardiac diseases. Six babies were delivered by mothers presenting chorioamniotitis. Primiparity was the most frequently associated with premature birth. Twin and multiple pregnancies represented 17% of cases. **Conclusions.** Prematurity rate still remains at high levels, with reduced possibilities of lowering it below the current level, because of multiple chronic pathologies involved in epidemiology. Improving perinatal and neonatal care has led to an increase in the survival rate of prematurely born neonates.

Keywords: birth, premature, epidemiology

Thyroid disease in pregnancy

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Introduction. The most common thyroid diseases during pregnancy are hyperthyroidism, hypothyroidism and various combinations of these. Autoimmune thyroiditis represents the main cause of hypothyroidism during pregnancy, with an incidence of 5-20%, with an average of 7.8%. The prevalence of Graves disease varies between 0.1% and 1%, and gestational hyperthyroidism syndrome varies between 1% and 3%. Thyroid stimulating hormone (TSH) is a specific marker of thyroid dysfunction during pregnancy. Normal values have been changed recently. Currently, the upper normal range is considered to be 2.5 mUI/ml in the first trimester and 3 mUI/ml in the other two trimesters. **Materials and method.** We have searched literature data about thyroid pathology associated with pregnancy. We evaluated the related studies of the impact of these diseases on pregnancy and neonatal development. **Results.** Studies have shown that maternal thyrotoxicosis is associated with increased risk of spontaneous abortion, congestive heart failure, thyrotoxic crisis, preeclampsia, premature birth, low birth weight births and intrauterine fetal death. On the other hand, studies have shown that the frequency of maternal and fetal complications is strictly related to the duration and inadequate treatment of maternal thyrotoxicosis. **Conclusions.** Despite contradictions among professional organizations, recent analysis-based trials encourage the universal screening of thyroid disease in the first trimester of pregnancy.

Keywords: pregnancy, thyroid, hyperthyroidism, hypothyroidism

Placentary retention – placent percreta: case presentation and literature review

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Introduction. Placenta percreta is the rarest form of placenta accreta, which can be associated with extremely severe complications such as massive bleeding, dialysis intravascular coagulation and even patient's death. **Materials and method.** We present the case of a 30-year-old patient who was admitted to our clinic for metrorrhagia started about two months before. The patient stated she was diagnosed two months before with an ongoing pregnancy for which she underwent drug treatment. The clinical and paraclinical examination revealed an enlarged uterus as a 14-week pregnancy with predominant development in the isthmus. The uterine cavity was occupied in the lower third part by a heterogeneous acoustic formation of 77/47 mm. For the suspicion of endometritis, the patient was given broad-spectrum antibiotics. At 24 hours, the patient presented with severe vaginal hemorrhage. Hemostasis maneuvers were started, uterin curettage, followed by vaginal tamponade. Inefficient hemostasis followed by rapid degradation of the patient's condition. Subtotal hemostatic hysterectomy was decided and performed. The postoperative evolution was favorable. **Results.** The macroscopic examination of the operative part revealed the placenta percreta with necrosis of the uterine wall. **Conclusions.** There is a correlation between the incidence of placenta percreta and the incidence of births by caesarean section. The antenatal diagnosis of percutaneous placenta by Doppler ultrasonography is extremely important in preventing complications.

Keywords: placenta, percreta, hemorrhage

Complications in a case of Pena-Shokeir syndrome type 2

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Introduction. Pena-Shokeir syndrome (PSS) type 2 is also known as cerebro-oculo-facio-skeletal (COFS) syndrome. It is a rare autosomal recessive disorder. It is a rapidly progressive neurological disorder resulting in brain atrophy, characterized by intracerebral calcifications, cataracts, microcornea, optic atrophy, progressive joint contractures, and growth failure. **Materials and method.** We report the case of a 4-day-old newborn infant, female, with facial dysmorphism (microcephaly, enophthalmia, hypertelorism, low set ears, micrognathia), talipes *equinus varus*, rocker bottom foot, and scoliosis. From anamnestic date: young parents, first child, birht weight 2200 grams, gestational age 37 weeks. **Results.** Kariotype 46, XX. The molecular sequencing analysis detected a variant in homozygous status in the *ERCC6* gene located at chromosome 10q11.23. The pathogenic variants in the *ERCC6* gene are associated with cerebro-oculo-facial-skeletal syndrome. Radiography and hip ultrasound revealed bilateral congenital dislocation. The transfontanelar ultrasound revealed Dandy-Walker malformation, and the indirect opthamoscopy showed cataracts. **Conclusions.** This condition has been described as almost uniformly lethal, with 30% of fetuses being stillborn and live-born infants usually dying within the first month of life. In our case, the evolution was unsatisfactory, associated with sever mental retardation, and also poor gain weight and growth.

Keywords: Pena-Shokeir syndrome, COFS, neurological disorders

Dilatative cardiomyopathy in pregnancy – case presentation

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Introduction. Dilatative cardiomyopathy (CMPD) in pregnancy, defined as dilation and systolic dysfunction of the left or both ventricles, is an extremely rare pathology. Clinical manifestations are those of heart failure. **Materials and method.** We present the case of a patient, aged 23 years, pregnant, from the low obstetric risk group, diagnosed with CMPD at the gestational age of 24-25 weeks. The patient went to the emergency room for intense dyspnea, with a sudden onset. The ventricular ejection fraction (FE) was 19%. Despite the sustained treatment, the evolution of the case was unfavorable. Considering the special maternal prognosis reserved in cases with FE below 20%, after counseling the couple in multidisciplinary teams, it was decided to interrupt the pregnancy in the maternal interest at a very low gestational age (27 weeks). After birth, FE improved, but did not normalize. The patient entered the long-term cardiology team, being advised for the moment not to get another pregnancy. **Conclusions.** The evolution of CMPD in pregnancy is variable, and the systolic function of the left ventricle can be partially or completely recovered. Maternal prognosis remains reserved, especially in NYHA Class IV heart failure, with maternal mortality being closely linked to the level of care provided during the perinatal period. The total number of cases reported in the literature is small, the ideal management is not standardized, and the treatment must be individualized. Cases are extremely rare, and those with such an early onset (in the second trimester of pregnancy) are exceptional.

Keywords: dilatative cardiomyopathy, pregnancy, prognosis

The role of uterine cerclage in prolonging the gestational age

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The role of cervical cerclage in prolonging the gestational age constitutes a controversial topic in modern obstetrics, especially due to the increased morbidity and mortality associated with premature birth. The cervical cerclage represents an obstetrical manoeuver that strengthens the cervix, prevents amniotic membrane prolabation and preterm premature rupture of membranes, and extends the gestational age in singleton pregnancies. There are three distinct situations in which cerclage can be beneficial: prophylactic cerclage for cervical insufficiency; therapeutic cerclage, when ultrasound transvaginal evaluation of the cervix identifies modifications of length and/or shape, and emergency cerclage, in situations when we have dilatation of the cervix. The aim of our study was to asses retrospectively the circumstances of cervical cerclage in our clinic and to evaluate the benefits of this obstetrical manoeuver in prolonging the gestational age.

Keywords: cerclage, cervical insufficiency, cervical length, premature birth

Endometrial stromal sarcoma

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Introduction. Endometrial stromal sarcoma (SSE) is an extremely rare type of malignant uterine tumor, with an incidence of about 0.2% of the total. Biopsy uterine curettage, ultrasound examination and magnetic resonance imaging (MRI) may help to establish the diagnosis, but in most cases they are insufficient. **Materials and method.** We present the case of a 37-year-old patient with an incidental diagnosis of SSE. It has an absent pathological history and two uncomplicated natural births. Two years ago, she presented several episodes of menorrhagia, which required biopsy uterine curettage. The histopathological result denied the presence of endometrial pathology. Subsequently, the patient presented with chronic pelvic pain, refractory to anti-inflammatory and analgesic medication, severe algomenorrhea and dyspareunia. Ultrasound examination showed highly suggestive aspects for severe, endometrial and ovarian adenomyosis with normal structure. MR examination confirmed adenomyosis and excluded other pathological aspects of internal genital organs. Following counseling (complete family planning), a total abdominal hysterectomy (Pfannenstiel incision) was performed, with ovarian preservation. **Results.** The patient had a favorable evolution postoperatively. Surprisingly, the histopathological result revealed low-grade, invasive endometrial stromal sarcoma in the external half of the myometrium. According to the classification of pTNM - pT1NxMx. **Conclusions.** There is no data on which to establish the optimal management of the ESS, especially due to the extremely low prevalence. Ovarian preservation may be an option in young patients, and the role of lymphadenectomy is controversial. Preoperative diagnosis is difficult. In most cases, the diagnosis is specified after the hysterectomy indicated for benign pathology.

Keywords: endometrial stromal sarcoma, histological diagnosis, management

Sirenomelia – case report

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Introduction. Sirenomelia is a rare congenital malformative disorder characterized by complete fusion of the lower limbs, giving the foetus a mermaid-like aspect. Commonly, sirenomelia is associated with other system and organs anomalies, such as renal agenesis, absent external genitalia, other gastrointestinal defects, and with vascular disorders – single umbilical, persistent vitelline artery, which is considered to be the pathognomonic anatomical finding distinguishing sirenomelia from caudal regression syndrome. Its etiology is still controversial and the prognostic is poor, despite the treatment. **Materials and method.** We report a case of sirenomelia diagnosed antepartum, in the first trimester, using two- and three-dimensional and Doppler mode ultrasound, which was also confirmed by additional CT-scan of the postabortum specimen and by our foetopatological findings. **Conclusions.** Sirenomelia is a rare, multisystemic pathological entity, with a very poor prognosis. The ultrasound evaluation of the limbs in the first trimester is effective in detecting major fetal anomalies. Therefore, this case emphasizes the need of introducing limb scanning in the standard protocol of the fetal anatomy evaluation in the first trimester of pregnancy.

Keywords: sirenomelia, caudal regression, ultrasonography

Borderline ovarian tumors – ultrasonographic aspects

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Introduction. Transvaginal ultrasound evaluation is the standard of routine gynecological care for both asymptomatic patients and those presenting with painful phenomena, abnormal vaginal bleeding or enlargement of the abdomen. The purpose of this study is to present the advantages of ultrasonography in the detection and the most accurate characterization of borderline ovarian tumors in patients evaluated in the Craiova County Emergency Clinical Hospital. **Materials and method.** We performed a two-year retrospective study, which included 49 patients with borderline ovarian tumors. Each case was evaluated using 2D routine examination, sometimes 3D reconstructions. For each tumor, size, morphological aspects and power Doppler characteristics were noted. The results were compared with those of patients with malignant ovarian tumors or benign ovarian tumors. The scans were performed by two experienced examiners, using a Voluson E8 system (General Electric Healthcare), between May 2017 and May 2019. **Results.** Of the 49 cases, 23 were ovarian mucinous tumors, and 26 were borderline serous cystadenomas. Intracystic papillary projections were significantly more common in borderline tumors (51%) than in benign tumors (4%) or in malignant tumors (3%). In 45 cases, the histopathological diagnosis confirmed the imaging suspicion (91%). Three cases were underdiagnosed, the histopathological result confirming invasive malignancy. **Conclusions.** The most common ultrasound description of borderline ovarian tumors is represented by the presence of intracystic papillary projections. However, they do not represent an ultrasound marker with higher sensitivity for the diagnosis of borderline ovarian tumors.

Keywords: ultrasound, borderline ovarian tumors, papillary projections

Umbilical cord pathology – diagnosis and prognosis in cord insertion abnormalities

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Introduction. The umbilical cord is an important component of the fetal-placental functional unit, with a major role in fetal oxygenation. Prenatal diagnosis of umbilical cord abnormalities helps to anticipate perinatal hypoxic-ischemic fetal distress and can guide the therapeutic attitude depending on the severity of fetal distress, thus being responsible for premature birth, intrauterine growth restriction or low birth weight. **Materials and method.** In order to carry out our work, we selected a number of cases of umbilical cord pathology, also tracking the pathophysiological implications on their pregnancy, as well as the evolution of the intra- and post-partum fetus. **Results.** Umbilical cord pathology can be classified into: tumor pathology, represented by aneurysms, varicose veins, cysts, vascular abnormalities of the supranumerous vessel type or single umbilical artery, umbilical cord insertion abnormalities, fetal cord insertion abnormalities, true umbilical cord nodes. **Conclusions.** In conclusion, the umbilical cord pathology can be diagnosed by ultrasound examination starting with the eighth week of pregnancy, so that both the prognosis and the therapeutic attitude depend on the time of diagnosis and the possible associated fetal abnormalities.

Keywords: abnormal cord insertion, prenatal diagnosis, umbilical cord pathology

Ultrasound assisted labor and delivery management

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In recent years, ultrasonography is getting used more often in active labor to avoid increased caesarean section rates. The effective use of this imaging modality is reported to be providing essential information in the management of active labor. Most of these techniques are easy and reproducible by both experts and nonexperts. Different approaches, such as transabdominal, transvaginal or transperineal ultrasonography, are used for the evaluation of both maternal pelvis and fetal head position/engagement. Images in both 2D or 3D techniques are reported to be used for these purposes. Ultrasonographic imaging at active labor also seems to be effective in the diagnosis of asynclitism or cephalopelvic disproportion. More information regarding the success of labor induction or prediction of emergent caesarean section is shown to be provided by ultrasonograpic evaluation. Ultrasonographic evaluation is also reported to be effective in the evaluation of labor progress by determining factors such as fetal head position, cervical evaluation, asynclitism, and occiput position. There are also some certain specific factors defined such as occiput-spine angle, fetal head-symphisis distance or pubic angle to predict succesful labor induction and the risk of cephalopelvic disproportion.

Keywords: ultrasonography, vaginal delivery

Detection of hemivertebra in the first trimester of pregnancy

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Hemivertebra (HV) is a congenital anomaly of the spine, characterized by the absence of half of one or more vertebrae. In most cases, HV is seen as an isolated malformation, but in severe cases it can be part of a genetic syndrome, such as Jarcho-Levin, Klippel-Fiel or VACTERL, or it can be identified in trisomy 18. HV can be detected from 12 weeks of pregnancy during early fetal morphological ultrasound. For HV screening in the first trimester, the ultrasound examination of the spine will be done along its entire length in the coronal and axial sections. The correct arrangement of the centers of ossification in each vertebra must be followed, which in the normal version are arranged at an equal distance between them, forming one or several uninterrupted and parallel rows. The presentation describes indirect ultrasound signs, such as spinal and rib deformation, as well as direct ones, which consist of direct visualization of HV. The correct settings of the ultrasound and the examination with different probes allow precise location of the HV. HV screening should be followed by detailed examination of the CNS, kidneys, heart, anorectal region and locomotor system. The prognosis depends on the location and HV number, as well as on the association with other congenital anomalies. Early identification of HV allows additional diagnostic measures to be carried out, which allows doctors and parents to make the correct decisions regarding the fate of the pregnancy.

Keywords: hemivertebra, spinal abnormality, trisomy 18

Materno-fetal vascular remodeling in pregnancies complicated with operated severe maternal cardiopathy

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Introduction. The new recommendations from 2018 of the European Society of Cardiology have increased the number of congenital heart disease operated which allows them to be pregnant. This cases, although a few in absolute numbers, raise interdisciplinary and logistical problems. **Materials and method.** Consecutive cases of pregnant women with severe operated cardiopathy, monitored interdisciplinary in collaboration with the "C.C. Iliescu" Institute of Cardiology Diseases, benefiting from intensive fetal screening in order to establish the fetal impact. **Results.** Case 1: mitral mechanical valve (>10 years), cardiac pacemaker for complex congenital heart disease – *ostium primum* septal defect, anterior mitral valve cleft; imposes continuous oral anticoagulation for the risk of valve thrombosis (20% mortality risk). The patient develops intrauterine growth restriction. Case 2: Barlow's disease – preconceptional mitral valve plastic repair for major risk of sudden death from severe arrhythmia. The attention is focused on the fetus; the mother has severe corrected mitral disease, polycystic kidney disease, retinal detachment, autoimmune thyroiditis, and requires genetic counseling. A macrosome child is born. Case 3: aortic mechanical valve for severe stenosis and abortive disease. The patient is under therapeutic LMWH regimen with anti-Xa monitoring and ACO switch in the second trimester. An eutrophic child is born. **Discussion.** It is necessary to acknowledge that the intrauterine growth restriction, as an expression of vascular-placental remodeling, is not a mandatory event in these pregnancies. **Conclusions.** The management needs to be individualized based on adaptive cardiac and vascular remodeling, the need for medication with fetal impact and the genetic risk. It is essential to be able to identify and discuss the risk preconceptionally with the future parents, and to monitor the mother and the fetus in multidisciplinary teams trained in this area.

Keywords: cardiopathy, intrauterine growth restriction

Mosaicism detection in prenatal diagnosis using the MLPA and QF-PCR techniques

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Introduction. Multiplex Ligation-dependent Probe Amplification (MLPA) and Quantitative Fluorescent-Polymerase Chain Reaction (QF-PCR) techniques were reported to be efficient without conventional karyotyping for prenatal diagnosis of aneuploidies. However, there are a lot of situations where QF-PCR and MLPA techniques may miss out some genetic abnormities. For example, the mosaicism is an interesting situation. In order to evaluate and to compare the level of chromosomal mosaicism detection by QF-PCR and MLPA techniques in prenatal diagnosis of fetal aneuploidies, we conducted the present experimental study. **Materials and method.** The DNA of a 17-month-old fetus diagnosed with complete trisomy 21 was used for MLPA analysis. The DNA with complete trisomy 21 was diluted with a DNA without aneuploidies (the control DNA). For QF-PCR we included one probe, confirmed by conventional karyotyping, with trisomy 21 (with a translocation) in 50% of the cells. In this respect, SALSA MLPA P095 Aneuploidy and Elucigene QST*R Plusv2 kits were used. **Results.** The MLPA analysis was able to confirm the diagnosis of trisomy 21 on probes with mosaicism (with 50% of cells with trisomy) and also to suggest the possibility of trisomy in cases with 25% mosaicism. The QF-PCR technique was unable to detect the genetic anomaly of the probe used. Each technique, including the conventional karyotyping, has several advantages, disadvantages and challenges that will be discussed, including the costs of each analysis. **Conclusions.** Based on our results, MLPA analysis seems to be more efficient on mosaicism detection. The QF-PCR had the advantage of DNA contamination detection which also is very important on prenatal diagnosis.

Keywords: MLPA, QF-PCR, mosaic, aneuploidy

MOD-LMPI feasibility in the third trimester using pulsed-wave Doppler

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Introduction. The Myocardial Performance Index (MPI) is a functional fetal echocardiography tool used as a measure of global ventricular function. It has been proven to be a sensitive marker of cardiac dysfunction and may represent the initial stages of cardiac adaptation to different perinatal insults. Since conventional Doppler is universally accessible nowadays, MPI could be a useful tool for obstetricians to screen fetal wellbeing. The aim of this study was to determine the feasibility and reproducibility of MPI in the third trimester. **Materials and method.** This was a prospective observational study of normal singleton pregnancies, with gestational age between 30 and 34 weeks. During the third trimester screening ultrasound, each fetus was scanned by one operator for a maximum of 45 minutes, eventually with a repeat 15-minute scan after a 30-minute break. The following data were collected: maternal Body Mass Index, parity, gestational age, initial fetal position, modified left MPI, time to obtain a clear MPI waveform. **Results.** The study cohort comprised 48 singleton pregnancies (gestational age 31.5±1.2 weeks, BMI 22.3±2.4 kg/m^2, parity 0.7±0.2, Mod-LMPI 0.41±0.07 ms). Mod-LMPI was feasible in all cases, with a good intraobserver agreement (coefficient of variation: 7.2%). The examination time was under 15 minutes in >70% of cases. The most accessible positions for LMPI measuring were dorso-posterior (right + midline) and dorso-anterior (left + midline). MPI feasibility did not depend on BMI, parity or gestational age. **Conclusions.** Using MPI as a screening tool for cardiac dysfunction in the third trimester is a difficult task, requiring time and a trained operator. Its feasibility is highly dependent on fetal position.

Keywords: Myocardial Performance Index, functional fetal echocardiography, pulsed-wave Doppler, feasibility

Malignant adnexal mases diagnosed during pregnancy: case report and literature review

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The incidence of adnexal masses during pregnancy is common and ranges from 1/81 to 1/2,500 pregnancies, but in 95% of cases they are benign. In approximately 5% of cases, these masses can be malignant, such as primary ovarian cancer or Krukenberg tumor. We present the case of a 35-year-old nulliparous woman, who was diagnosed with a 10-cm right adnexal mass during ultrasound for aneuploidy screening test at 12 weeks of gestation. After imagistic examinations, laparoscopy was performed at 17 weeks of gestation, due to the tumoral growth, and the histopathologic exam revealed a Krukenberg tumor. The occurrence of digestive tract cancers in women under 40 years of age is a rare situation, but this diagnosis during pregnancy is uncommon. The diagnosis of this pathology during this period is difficult due to the signs and symptoms of the pregnancy which can mask colorectal cancer symptoms.

Keywords: pregnancy, Krukenberg tumor, colorectal cancer

An underestimated pathology – peripartum depression

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Introduction. Peripartum, 85% of patients have mental changes, with half of the depressive episodes occurring before birth. Patients with a history of depression or disability are most likely to have an affective disorder, with multiple causes: hormonal changes, psychosocial stress, domestic violence, abuse history, depression history, gestational diabetes or family history of mental illness. **Materials and method.** The present paper is a review of literature from countries with concerns in the field. The purpose is to discover the causes and symptoms of peripartum depression, to detect pregnant women at risk, but also to find ways to reduce and treat peripartum depression. **Results.** Depression presents a diverse clinical picture – crying, fatigue, appetite or sleep disorders, loss of interest, symptoms that are not always obvious and often not recognized by the patient for fear of not being judged. The attending physician can easily perform a screening test – the Edinburgh Scale, which contains 10 questions and offers a sensitivity of 60-100% and a specificity of 50-100%, patients with suggestive answers for an affective disorder being referred to the psychiatrist. Currently, multiple therapies are used: cognitive therapy, which changes the patient's approach to the current situation, psychosocial interventions that include family members and alternative treatments such as aromatherapy or homeopathy. **Conclusions.** Peripartum depression is a commonly encountered pathology, but patients are often underdiagnosed, undiagnosed, or diagnosed too late. This suffering must be addressed in a multidisciplinary way, with the help of the obstetrician, neonatologist, psychiatrist and psychologist, with the support of family and friends always being helpful, and most often the treatment is effective.

Keywords: depression, pregnancy, screening test

The influence of parental factors in the development of newborns with intrauterine growth restriction in the first six months of life

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Introduction. Intrauterine growth restriction (IUGR) is, after prematurity, the second cause of perinatal mortality and is associated with an increased risk of perinatal complications. IUGR etiology is multifactorial, including genetic mechanisms, based on maternal and/or paternal factors. **Materials and method.** This is a prospective study that assesses the influence of parental factors on the growth rate of neonates from IUGR pregnancies evaluated at one month and six months postnatally. **Results.** We analyzed 40 neonates with IUGR at birth, 62.50% of which were females. The average gestational age at delivery was 35.83±3.17 weeks, and 80% were born by caesarean section. The mother body mass index was found within the normal range in 55% of cases, 12.5% of mothers were underweight, and 10% were obese. The predominant pregnancy-associated pathology was preeclampsia (27.5%). Maternal smoking habit was recorded in 30% of cases, and paternal smoking in 37.5% of cases. The ideal growth rate was not respected in 88% of cases at the one-month follow-up and respectively in 17.33% of cases at six months. Significant differences were obtained by analyzing the gender distribution (female 28% versus male 60%; p=0.046) in one-month-old newborns. The number of days to the recovery of birth weight did not differ significantly for female and IUGR newborns. **Conclusions.** Maternal and paternal anthropometric characteristics can influence the development of the newborn with IUGR. The predominant pregnancy-associated pathology was preeclampsia. The ideal growth rate was not respected in most cases at one month, and in less than one fifth of cases at six months.

Keywords: parental, intrauterine growth restriction

Fetal optic chiasm: three steps for visualization and measure in routine transabdominal ultrasound

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The optic chiasm (OC) is an X-shaped structure formed by the crossing of the optic nerves in an axial view of the fetal brain. It is located in the chiasmatic cistern and is surrounded by the Willis circle. The anterior cerebral arteries lay anteriorly, the posterior communicant arteries lay laterally, and the posterior cerebral arteries are identified posteriorly. The main advantage of this technique is the accessibility to all sonographers, no need of TV ultrasound and it could be performed from 20 weeks onwards. The operator has to obtain an axial image of the fetal head at the level of the transventricular plane as described by ISUOG guidelines. Slide the probe caudally and then activate color Doppler to identify the Willis circle (only for orientation; WMF low, PRF 1.3-2.4 kHz). Three steps are required from this point to achieve the adequate image of the OC and perform the width measurement:

1. Rotate the transducer in the frontal part until at least one orbit is seen (the anterior orbit and cerebral peduncles must always be identified). The rotating angle is 20-40° and varies according to the gestational age.

2. Identify the OC by its characteristic echogenic X shape. The activation of the color Doppler shows the middle cerebral arteries (MCA) arising from internal carotids on the sides.

3. Measure the width of the OC in the middle of the X shape with callipers on to on. We recommend performing the measurement switching the color Doppler off and turning the gain down when needed for better delimitation of the borders.

This three-step technique for fetal OC assessment is easy to perform and does not increase significantly the scanning time.

Keywords: fetal optic chiasm, routine ultrasound, fetal brain assessment

Operative vaginal delivery – trends in Filantropia Clinical Hospital in the last 15 years

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Background. Operative vaginal delivery (OVD) consists in forceps and vacuum use in order to enable or expedite safely vaginal deliveries whenever maternal or fetal indications mandate it. It is used to reduce the need for caesarean section (CS) in the second stage of labor. **Materials and method.** Our study is a retrospective analysis assessing over 20,000 deliveries from the Filantropia Clinical Hospital, Bucharest, in two intervals of time, 2003-2007 and 2015-2018. The rates of OVD and of caesarean section were evaluated, as well as indication of instrumental deliveries, and fetal Apgar scores at 1 and 5 minutes. **Results.** Between 2003 and 2007, a steady increase in CS rate was observed, from 31.6% in 2003 up to 38% in 2007; vacuum extractor (VE) was not available and only forceps was used, with slightly increased trend from 1.8% in 2003 to 2.2% in 2007. CS rate increased to 45.8% in 2015 and remained stable, to 45.6% in 2018. The OVD profile changed, with an increasing use of VE from 0.7% in 2015 (and 2.2% forceps) to 3.5% in 2018 (and 1.2% forceps). The rate of OVD increased overall in the last five years, mainly due to VE use, from 2.9% in 2015 to 4.7% in 2018. However, this was not followed by a reduction in CS rate. No significant differences were found in Apgar scores between OVD, CS and spontaneously born babies. **Conclusions.** The OVD pattern significantly changed over time in the Filantropia Clinical Hospital, with an increase due to VE use and a decreased use of forceps. CS rate has increased over time, but has remained stable in the last years. No significant differences in neonatal outcomes were observed between different delivery modes.

Keywords: operative vaginal delivery, vacuum extractor, forceps delivery

Mode of delivery in intrauterine growth restriction – "Filantropia" Clinical Hospital experience

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Background. Intrauterine growth restriction (IUGR) defines the fetus that fails to reach its biological growth potential due to maternal, fetal or placental factors. The ultrasound threshold used when assessing fetal growth is usually the gestational age-specific 10th percentile. The mode of delivery depends usually on the level of fetus compromise, up to 50% to 80% successful vaginal delivery rates being cited. **Materials and method.** We present a retrospective study that included 10,098 births from Filantropia Clinical Hospital of Obstetrics and Gynecology, between January 2015 and July 2018. Of these, 312 IUGR cases were identified and analyzed. A comparison between the subgroup delivered vaginally and the one delivered by caesarean section (CS) was undertaken. **Results.** The prevalence of IUGR in our cohort was 3.1%. Over 70% of patients were nulliparous. The average fetal weight at birth was 2,227.7g, with average Apgar score of 7.9 at one minute and of 8.6 at five minutes. The average gestational age at birth was 37 weeks. Overall, 76.7% of patients delivered by CS, 22.4% delivered vaginally, and a minority of 0.9% delivered by operative vaginal delivery. When divided in subgroups, the patients delivered vaginally compared to those delivered by CS had a higher gestational age at delivery (38 versus 36.7 weeks), higher Bishop score (5.4 versus 1.7) and higher average birth weight (2451 g versus 2159 g). There was no significant difference in Apgar scores at 1 and 5 minutes between the two groups (8.1 and 8.8 compared to 7.9 and 8.5, respectively; p>0.05). **Conclusions.** The majority of IUGR patients in Filantropia Hospital were delivered by CS. There were no significant differences between outcomes of foetuses delivered by CS or vaginally.

Keywords: intrauterine growth restriction, vaginal delivery, caesarean section

Cervical cerclage – case report

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Introduction. One of the most common causes of late abortion or severe prematurity is represented by cervical incompetence. Cervical shortening and dilation are the consequence of sustained uterine contractions, often asymptomatic. In most cases, the triggering factor is the infectious pathology and the secondary inflammation. The cervical cerclage is a surgical maneuver designed to create a barrier between the non-sterile vaginal environment and the uterine cavity. This procedure is performed after the acute episode is treated, but there are cases when it will be performed concomitantly with the drug treatment. **Materials and method.** We present a series of cases of cervical surgery performed in patients with a gestational age between 19 and 22 weeks, with an infectious component present. The procedure was realized by installing a double, non-absorbable thread, at the level of the cervix, which was suppressed at 37 gestational weeks. **Results.** The tasks evolved favorably until 38-39 gestational weeks, when the RPPM, respectively sustained UC took place. The ribbon was suppressed, and the patients gave birth spontaneously, respectively by caesarean section, when necessary. **Conclusions.** Despite the fact that the success rate of the ribbon performed in the presence of the uterine contractions is low, there are situations when this may represent the last solution for the prevention of the late abortion, respectively the premature birth.

Keywords: cerclage, infection, prematurity

Seroprevalence of hepatitis B virus infection in pregnancy – practical issues

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Introduction. According to recently published data, in Romania we register an increasing prevalence of HBs antigen, the consequence being the vertical mother-child transmission and, also, the possible chronicization, if the infection is unknown or the newborn is treated improperly. The correct treatment consists in vaccinating the newborn within the first 24 hours with the first dose of hepatitis B vaccine and administering hepatitis B immunoglobulin in the first 12 hours postpartum, regardless of birth weight. This is the standard of care in most European countries and in the US. **Materials and method.** Data were collected from the register of births within the Bucharest Emergency University Hospital – patients who were born in our hospital between January 1st, 2013 and December 21st, 2017. **Results.** During the five-year follow-up, the incidence of patients with positive HBs antigen varied between 6.48% and 7.05% (1068/15,894 patients). The highest risk of maternal-fetal transmission was observed when pregnant women positive for HBs antigen were positive for HBe antigen and when the viral load was over 2000 viral copies, even if prophylaxis at birth was correct. Also, the risk was higher in patients under 25 years old and in those with incomplete vaccination. **Conclusions.** Although a national hepatitis B immunization programme has been active for more than 20 years, pregnant women remain an important reservoir. Screening of women before or early during pregnancy and the application of recognized positivity guides are of utmost importance in our country.

Keywords: hepatitis B, prophylaxy, pregnancy

Prevention of respiratory distress syndrome in preterm infants. Experimental research

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Introduction. The antenatal administration of steroids in pregnant women at risk of premature birth is the most effective drug intervention to prevent respiratory distress syndrome in preterm infants and to reduce neonatal morbidity and mortality due to prematurity. **Materials and method.** The research was carried out at the Banat University of Agricultural Sciences and Veterinary Medicine Timișoara. The white rat was chosen as the experimental animal. After mating, during gestation dexamethasone was administered on day 16-18. The protocol of administration to pregnant women was simulated, after which the fetuses were extracted by caesarean section and sacrificed, at different intervals. **Results and discussion.** At the histopathological examination it was noted that the best degree of maturation of the lung structures was obtained in the groups C and B of rat fetuses (two doses of dexamethasone at 12 hours and 6 hours, sacrifice at 12 or 6 hours, respectively). By comparison, from the histoarchitectural point of view, the lungs of the fetuses in group A (a dose administered to the pregnant female 12 hours before birth and sacrifice) are in the second last stage of development – i.e., the saccular phase, as in the cases of group C. **Conclusions.** The study demonstrates that a degree of maturation can be achieved even in the incomplete protocol group, similar to the full protocol group, provided the prophylactic administration of dexamethasone is done at least 6-12 hours before birth. The structural maturation occurs even when corticoids are administered a few hours before birth, even in a single dose.

Keywords: respiratory distress syndrome, dexamethasone, experimental study

Amniotic fluid pocket and premature rupture of membranes – a milestone in newborn's transition to extrauterine life

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Introduction and objective. Preterm rupture of membranes is a frequent cause of maternal-fetal infection and preterm birth worldwide. A correct medical management of these situations is strongly influenced by ultrasound evaluation of the fetus and amniotic fluid at the time of admission. We aimed to identify a possible correlation between the ultrasound assessment of amniotic fluid, gestational age and documented neonatal fetal adverse outcomes in patients who delivered before 37 weeks of gestation. **Materials and method.** We developed a pilot study on patients with preterm ruptured membranes, admitted in 2018 in the "St. Pantelimon" Emergency Clinical Hospital, Bucharest, a tertiary care unit. A database was created, collecting information on maternal status at the time of admission, ultrasound pregnancy evaluation, and fetal paraclinical markers determined immediately after birth. Positive cultures for maternal genital infections were correlated with the early onset of neonatal infection; both qualitative and quantitative evaluations of amniotic fluid were considered in the study and they were correlated with postpartum fetal outcome regarding inflammatory serum biomarkers and the need for respiratory support. **Results.** There were 1223 births in 2018 in our clinic. Almost 29% of 217 patients admitted with ruptured membranes had less than 37 weeks of pregnancy. The delivery by caesarean section was documented in 63.79% of the cases. There was no statistically significant difference between Apgar score in foetuses delivered by caesarean section compared to those delivered vaginally (p=0.518). Respiratory distress was diagnosed in 37.93% of the foetuses; they had a corresponding mean of 55 hours of spontaneous rupture of membranes before birth and 63.63% of them had less than 34 weeks of gestation. The ultrasound assessment of amniotic fluid was done using amniotic fluid index, the deepest vertical pocket method or subjective qualitative estimation. **Conclusions.** The correct management of patients diagnosed with preterm ruptured membranes is still a matter of concern since approximately 5% of all births in 2018 were accounted in this group. The improvement and consistency in the strict evaluation of amniotic fluid are still to be better implemented, since it plays a significant role in deciding over expectant or active management.

Keywords: amniotic fluid, preterm rupture of membranes, PCR, respiratory distress, infection

Is pneumotorax in newborn associated with positive pressure ventilation?

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Aim. The aim of the study is to establish the association of ventilation with positive pressure in the onset of pneumothorax in the neonatal period. **Introduction.** The increasing number of premature births, labor births and the large number of caesarean sections in the late prematurity have led to an increase in the number of newborns who have symptoms of respiratory distress syndrome, some being associated with the presence of pneumothorax. **Materials and method.** A retrospective study was performed, over a period of 18 months, on a batch of 16 patients admitted to the "Louis Țurcanu" Children's Emergency Clinical Hospital, Timișoara, Neonatology – Preemies Section, diagnosed with pneumothorax during the period 2018-2019. **Results.** From 1376 newborns admitted, 16 patients developed pneumothorax, the incidence being 1.16%. Of these, 11 patients (68.75%) needed positive pressure ventilation at the birth ward and five patients (31.25%) did not require resuscitation maneuvers. Eight newborns had a gestational age over 37 weeks and eight were preterm infants below 37 gestational weeks. Depending on the birth weight, nine patients had the weight over 2500 g and five had weight under 2500 g. The most common cause of pneumothorax in the study group was the respiratory distress syndrome (62.5%). **Conclusions.** Pneumothorax is an important condition in neonatal pathology which requires prompt treatment to reduce the development of secondary complications, and the association of ventilation with positive pressure is an important risk factor in its occurrence.

Keywords: pneumothorax, newborn, positive pressure ventilation

Osteopenia of prematurity – biochemical aspects

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Osteopenia of prematurity is a bone metabolic afection characterized by decreasing of the postnatal bone mineralization. It is a multifactorial afection in which there are involved the following factors: prematurity, inadequate D vitamin, calcium and phosphorus intake, prolonged total parenteral feeding, associated pathologies (bronchopulmonary dysplasia), as well as the therapy with diuretics and corticosteroids. **Objective.** The authors aim to establish the incidence of osteopenia of prematurity and to identify the biochemical modifications that occur. **Materials and method.** The study is carried on in the Neonatology Department of the "Louis Ţurcanu" Clinical Emergency Hospital for Children, Timişoara, during one year. The study included 40 newborns with gestational age less than 37 weeks and with birth weight less than 2500 grams. **Results and discussion.** There were two groups set, depending the birth weight: Group I = 2500-1500 grams, and Group II <1500 grams. At the studied groups, there were serially determined starting with three weeks postnatal: ionic and total calcium, magnesium, phosphorus, alkaline phosphatase, D vitamin. It was monitorized the period of parenteral feeding, as well as the type of feeding – natural, artificial, the usage of human milk fortifiers, and the associated pathology. There were observed low values of seric phosphorus and D vitamin, and high values of alkaline phosphatase in a higher percentage in Group II compared with Group I. The values of seric calcium were within normal limits. **Conclusions.** Monitoring the biochemical parameters at newborns with birth weight <1500 g is important in the prevention and early detection of prematurity osteopenia. It is also important in the prevention of subsequent complications of osteopenia.

Keywords: prematurity, osteopenia, biochemical modifications

Spinal muscular atrophy type I – case report

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Spinal muscular atrophy (SMA) includes a group of neuromuscular disorders characterized by the degeneration of alpha motor neurons in the spinal cord, leading to progressive muscle atrophy, weakness and paralysis. The most common form is spinal muscular atrophy type I, also called Werdnig-Hoffmann's disease. This disease is caused by the deletion of the *SMN1* gene (located on 5q11.2-q13.3 leve) that encodes the *SMN1* protein of the motor neuron and the presence of several copies of the *SMN2* gene, which produces reduced levels of SMN protein, however insufficient for normal motor neuron function. We present the case of a male newborn delivered early term (at 37 gestational weeks) by caesarean section at the "Elias" University Emergency Hospital, Bucharest, who presented at birth severe axial hypotonia, absence of ROT (osteotendinoid reflexes) and archaic reflexes (only sucking reflex being preserved). The clinical examination revealed particular facial characteristics, almond-shaped eyes, oblique upward and micrognathia. Molecular genetic testing disclosed the homozygous deletion of exons 7 and 8 of the *SMN1* gene and two additional copies of the *SMN2* gene, consistent with the clinical diagnosis of spinal muscular atrophy type I. The peculiarity of this case is that, although the child presented active fetal movements during pregnancy, at birth he exhibited severe axial hypotonia and in evolution he mantains a normal respiratory function.

Keywords: newborn, spinal muscular atrophy type I, hypotonia

Analysis of the rate of cesarean section according to the Robson classification at the Municipal Clinical Hospital, Chișinău

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In the Republic of Moldova, the rate of Caesarean section (CS) is constantly increasing, from 12% in 2007 to 22% in 2018, which makes it necessary to evaluate this phenomenon, by developing and implementing new strategies to reduce birth by cesarean section. The World Health Organization recommends Robson classification as a global standard for recording and monitoring CS. **Purpose.** Analysis of the CS rate in the Municipal Clinical Hospital (SCM) no. 1 from Chisinau, Republic of Moldova, using the standard system of classification into ten groups according to Robson. **Method.** A prospective, cross-sectional study was conducted, in which all the women who gave birth between January 1 and December 31, 2017 in SCM no. 1 were classified into Robson groups to calculate the CS rate and the absolute and relative contribution of CS for each group. **Results.** Out of 4351 births, 809 (18.6%) were born through CS. Robson Group 5 (multiparous, term, with cranial presentation and anterior CS) contributed the most (34.4%) to the relative CS rate. Out of 301 patients in this group, 266 had previously undergone a cesarean section (88%). Group 1 (all nulliparous women, term, with cranial presentation and spontaneous labor) and group 6 (nulliparous, monofetal pregnancy and pelvic presentation) were the second and third largest contributors to the relative CS rate, by 14.2% and 9.1% respectively. **Conclusions.** The results indicate that the largest groups contributing to CS are women with previous cesarean section, followed by nulliparous women with term pregnancy, cephalic presentation and spontaneous labor, followed by nulliparous women with pelvic presentation. We found that the Robson classification is clinically relevant and is an effective tool for CS rate analysis.

Keywords: Robson, caesarean section, current affairs

The impact of maternal preeclampsia on neonatal outcome

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Introduction. Preeclampsia represents the arterial hypertension after 20 weeks of gestation, associated with proteinuria (>300 mg/day), organ dysfunction (renal, hepatic, neurological and hematologic) or utero-placental dysfunction potentially causing growth restriction. Neonatal complications are caused by premature birth. The most frequent complications are respiratory distress syndrome (RDS), cerebral hemorrhage, sepsis, and necrotizing enterocolitis. **Materials and method.** We conducted a longitudinal case-control study between November 2013 and October 2015. The study included preterm newborns admitted to the Neonatology Department of Obstetrics and Gynecology I, Cluj-Napoca. Maternal preeclampsia was defined as maternal blood pressure value >140/90 mmHg, associated with proteinuria over 300 mg/day and other complications. The control group included preterm newborns from mothers without preeclampsia, matched for gestational age with the case group. The incidence of RDS and the presence of intrauterine growth restriction, hypoglycemia, cerebral hemorrhage, thrombocytopenia and neutropenia were assessed. In the case group, the incidence of caesarean section delivery was significantly higher than in the control group ($p<0.001$). Intrauterine growth restriction was more frequent in the case group compared to controls. RDS required surfactant therapy in a greater number of mothers in the case group compared to the control group ($p=0.004$). Thrombocytopenia and neutropenia were not influenced by the presence of preeclampsia. **Conclusions.** Preeclampsia influences the neonatal growth. Among the pathologies associated with premature birth, RDS evolution was significantly influenced by the presence of preeclampsia. In the studied group, no correlations of preeclampsia with thrombocytopenia or neutropenia were found.

Keywords: preeclampsia, IUGR, pregnancy

Maternal-fetal implications of hypothyroidism in pregnancy

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It is estimated that 1-25% of pregnant women require levothyroxine therapy for hypothyroidism. The main thyroid adaptive mechanisms in pregnancy are: increasing the serum level of thyroxine binding globulin; decreased availability of iodine; Placental HCG, which has a thyrostimulant effect. TSH values above 2.5 mUi /e confirm the diagnosis; Free T4 can be normal or low. In the context of hypothyroidism, there is an increase in the incidence of preeclampsia, premature birth, and postpartum haemorrhages. In the case of maternal hypothyroidism, the development of the fetus may be normal. It has been shown that thyroid hormone deficiency in the first trimester of pregnancy may induce fetal growth retardation, intellectual deficiency or spastic motor deficiency. Deficiency of iodine is one of the main causes of hypothyroidism during pregnancy. Detecting hypothyroidism in pregnancy requires early treatment. In patients with hypothyroidism prior to pregnancy, treatment should be tailored. Strategies for screening for hypothyroidism in pregnancy should mainly answer two questions:

1. Is thyroid function assessment necessary for all pregnant women?
2. Should iodine deficiency be prevented?

Thyroid function evaluation should be recommended to all women with a history of thyroid disease, in the family context of thyroid disease or autoimmune disease. Recent studies insist on the interest in systematic detection of all thyroid dysfunctions during pregnancy. Maternal hypothyroidism and fetal hypothyroidism exert significant adverse effects on the fetus. For these reasons, maternal hypothyroidism should be avoided.

Keywords: hypothyroidism, pregnancy, fetus

Intrauterine growth restriction – the epigenetic bedrock for adult life diseases. Literature review

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Introduction. Epigenetics involves the genes' expression which determines the phenotype, playing an essential role in heredity. Intrauterine growth restriction (IUGR) sums up a wide spectrum of factors, beginning with maternal ones, fetal, placental, and even genetical. **Materials and method.** For the present review, we gathered and revised a total number of twenty studies from the literature, all centered around the link between epigenetic implications of IUGR and the pathologies in the adult life. **Results.** The insufficient blood and nutrient supply force the fetal organism to adapt, and by those changes, it modifies the development of organs and systems, as well as their function, activity and predisposition to a variety of diseases. The brain and heart sparing phenomenon works by reducing the blood supply in the non-vital territories, and as a result, the development of deprived organs is compromised. The important pathologies arising from these adaptative changes are cardiovascular and insulin-resistance related. The catch-up growth theory refers to the rapid weight gain of the neonates with IUGR. This rapid weight gain debalance the metabolism, making the body to store more fat resistant to the insulin action. The serum level of fatty acids and cholesterol sets the premises of atherosclerosis. Histone altering and DNA methylation modify the gene expression, altering the cellular function, with shortening of the cell cycle. The shortening of telomeres, as a consequence of the oxidative stress, speeds up the cellular apoptosis. A prospective study followed-up children born with IUGR and concluded that those children presented heart hypertrophy, altered myocardial kinetics, and decreased arterial compliance. In addition to all that, oxidative stress is the cause of endothelial lesions. **Conclusions.** The epigenetic changes, along with postnatal factors like nutrition and behavior create the environment for later life diseases. The proper development and function of the human body begin short after fecundation and last after birth, becoming the bedrock of a healthy life.

Keywords: epigenetics, IUGR, placental insufficiency, cardiovascular pathology, insulin resistance

Evaluation of the efficacy determining the presence of group B streptococcus in vaginal discharge in pregnant women using the GBS DS kit and the Revogene system produced by GenePOC Canada compared to the intrapartum culture

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Introduction. Group B streptococcus (GBS), or *Streptococcus agalactiae* (Gram-positive bacteria), is responsible for many newborn health problems, such as respiratory distress, apnea, pneumonia, sepsis, or neonatal meningitis, which can cause severe adverse reactions or even neonatal death. Pregnant women are tested for GBS portage in a screening algorithm using the traditional method of cultivation on culture media, after the samples were collected in weeks 35-37 of pregnancy. The incidence of diseases caused by GBS infection has dropped dramatically, but even so, some cases are undiagnosed. Some studies and some European recommendations have discussed the use of intrapartum pregnancy screening, as there are sufficient cases of false negative/false positive results when antenatal screening is performed within 35-37 weeks of gestation. In this situation, a device (point of care) is needed to quickly and responsibly test pregnant women before birth, and for this it is recommended to use molecular biology (NAAT), such as real-time PCR. **Materials and method.** We conducted a prospective study, between 1.02-30.05.2019, by evaluating 100 pregnant women regarding GBS status, to demonstrate the effectiveness of the intrapartum tests. In Nova Vita hospital, the prevalence of GBS infection (detected by culture) has been established over the years as between 15% and 20%. **Results.** At the end of the study, only 83 pregnant women were eligible. In Nova Vita hospital, the prevalence of GBS infection (detected by culture) at 35-37 weeks of pregnancy was established in this study as 14.45%. The prevalence of intrapartum presence of GBS, detected by culture, was 7.22% (6 cases), and by the Revogene system it was 10.84% (9 cases). There were 9.63% (8 cases) in which the Revogene system was unable to provide any information about GBS infection, generally due to blood contamination. There were 14 cases (16.86%) in which two cartridges were used for one patient, generally due to improper placement of the cartridges in the device. This fact was changed by the device manufacturer by changing the cartridge fastening ring. This update will reduce the number of end-user errors. **Conclusions.** The Revogen system is a device that can be easily used in the birth room, the results are ready in a short interval (70 minutes), and molecular biology (NAAT), such as real-time PCR, detects more cases with GBS infection than traditional culture. In this way, medical personnel can prevent the complications of GBS infection in the newborn and mother.

Keywords: group B streptococcus, intrapartum culture, real-time PCR

Prenatal diagnosis of fetal venous system abnormalities – ultrasonographic aspects

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Introduction. Ultrasound examination of the fetal venous system has exposed a wide spectrum of malformations that affect it. These abnormalities of the venous system, especially of the hollow veins, may be associated with anomalies of the heart, intestinal tract and anomalies of symmetry of the body, the so-called left and right atrial isomerism. In this paper we present the experience of our center. We also intend to review the recent data from the specialized literature. **Materials and method.** Using the online database, we identified studies that reported the pathophysiology of this system, as well as the ultrasound aspect of its various anomalies. We will also present the report of two cases of fetal venous system abnormalities diagnosed in our center. **Results and conclusions.** Few cases have been reported, with various aspects of malformations. The prognosis of the two cases of our center was different. It is a case of malformation of the isolated venous system, which had a good prognosis, and a case in which other anomalies were associated, the prognosis being an unfavorable one. These results are in accordance with the results of the specialized studies.

Keywords: fetal venous system, ultrasonography, abnormalities

The trend of reproductive health in Romania for the last 14 years

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Introduction. The concept of reproductive health was introduced in Romania after the '90s by CDC, WHO and IOMC, although the terminology was mentioned in this period by Prof. Dan Alessandrescu in his treatise called *Biology of Human Reproductive Health*. **Materials and method.** This paper represents an analysis of the retrospective studies on the health of reproduction performed in Romania in 1993, 1996, 1996, 2004 and in 2016-2018 – prospective study. Comparing the data from the aforementioned studies, we analyzed the trends of the evolution of indicators in family planning, abortion, prenatal and postnatal care, breast cancer, STD management, HIV, AIDS, and domestic violence. **The results** are discussed through the intervention of risk and protection factors, the causes and effects of certain interventions in the aforementioned areas of reproductive health. **Conclusions.** We believe that the presentation will open opportunities, not only for knowledge, but also for reflection, and we want to launch discussions for both specialists in the field and for public policy makers.

Keywords: reproductive, health, biology

Teenage mother – epidemiological and social aspects

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Introduction. Teenage pregnancy is a serious medical issue and also a public health one. Romania has, together with Bulgaria, the highest rate of teenage pregnancies. Psychosomatic, environmental and social factors are significantly influencing the health of the teenage future mother. **Aim.** The identification of the epidemiological and social context of the pregnancies occurring in teenage girls. **Materials and method.** Births occurring in teenagers less than 19 years old recorded in out unit between 2016 and 2018 were analyzed. The epidemiological and social data of the mother and the father were collected from the hospital charts and statistically analyzed using SPSS for Windows 19.0. **Results.** During the study period, we recorded 603 deliveries in mothers less than 19 years old. The birth rate in teenage mothers declined gradually (38.3% in 2016, 27.7% in 2018). Most of the teenage mothers were resident in rural areas (77.8%), 85.2% of them without income source, and 9.5% being married. The mean educational level was 7±2.7 grades, 3.6% illiterate. The mean age of the mother was 16.7±1.2 years old (5% of them having less than 15 years old), while fathers had 22.8±4.4 years. Almost 20% of the pregnancies were not followed-up, around 4% of the mother had a significant pathology before pregnancy, but the complication rate during pregnancy was over 25%. A percentage of 6.4% of the mothers already had more than two pregnancies and 3.9% of them already had more than two children before the age of 19 years old. **Conclusions.** The birth rate in teenage mothers is still high, the residence in rural areas and educational deficits being important risk factors. Epidemiological and social data suggest the need for a targeted intervention mostly at the educational level in order to prevent teenage pregnancy, a situation with risks for both the mother and the child.

Keywords: teenage mother, pregnancy, education

Short-term outcome of late preterm infants according to delivery mode

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Introduction. The incidence of late preterm birth increased gradually in the latest years, mainly due to elective C-section and to changes in maternal demographics and pathology. **Objective.** To evaluate the influence of delivery mode on the short-term outcome of late preterm infants (LPIs). **Materials and method.** All LPIs delivered in our regional level III unit between 2013 and 2018 were included in the study. Neonatal characteristics and postnatal complications were comparatively analyzed between LPIs delivered vaginally and those extracted by C-section. The statistical analysis was performed using SPSS for Windows 19.0; $p<0.05$ was considered statistically significant. **Results.** During the study period, 585 LPIs were born vaginally and 385 were delivered by C-section. No significant differences were found between the groups as regards gestational age, birth weight, gender ($p>0.05$), and Apgar scores at 1, 5, and 15 minutes ($p>0.05$). LPIs delivered by C-section were often twins ($p<0.001$), needed more often resuscitation at birth (14.3% versus 9.1%; $p=0.012$; OR 95% CI 1.33 [1.08-1.63]), had more often anemia (28.5% versus 14.4%, $p<0.001$; OR 95% CI 1.58 [1.34-1.88]), lower hemoglobin values (16.3±2.6 versus 17.3±2.4 g/dL; $p<0.001$), and were more often admitted in the NICU (38.2% versus 26.9%, $p<0.001<$OR 95% CI 1.24 [1.10-1.40]). No other significant differences were found between the study groups. **Conclusions.** The short-term prognosis of LPIs delivered by C-section is comparable to that of the LPIs delivered vaginally. Still, LPIs delivered by C-section are still more often admitted to NICU compared to those delivered vaginally.

Keywords: late preterm infants, C-section, neonatal outcome

Meta-analysis on the advantages and adverse effects of corticosteroids administration in pregnant women with diabetes

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Introduction. In the case of pregnant women with diabetes, with a risk of premature birth up to 34 weeks of gestation, corticosteroid administration is recommended, with evidence that the benefits outweigh the risks of adverse effects that are especially metabolic. There is also taken into account the administration after 34 weeks, without a consensus on this. **Objective of the study.** Update of data on the benefits and adverse effects of antenatal corticosteroid administration in diabetic pregnant women. **Materials and method.** The results published in the last 10 years regarding the administration of antenatal corticosteroids in diabetic pregnant women were searched on specialized websites. The quality of the evidence was evaluated using the GRAD approach. **Results.** Finally, the current meta-analysis included studies totalling 1,700 cases which showed that antenatal corticosteroid treatment up to 34 weeks of gestation (compared to placebo or no treatment) is associated with a significant reduction in perinatal mortality, respiratory distress, intraventricular haemorrhage, necrotizing enterocolitis, and the need for mechanical ventilation. Studies of the impact on the mother's condition have shown that an imbalance of carbohydrate metabolism with increases in blood sugar is expected in the following days, especially on the second and third days. **Conclusions.** Although the current data confirm the benefits of corticosteroid administration in antenatal diabetic pregnant women before 34 weeks of gestation, we did not find significant studies regarding the administration of antenatal corticosteroids in diabetic pregnant women after 34 to 36 weeks of gestation.

Keywords: corticosteroids, antenatal, pregnancy, diabetes

Estimation of the utility of administration of antenatal corticosteroids in pregnant women with risk of birth in the late preterm period

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Introduction. More and more specialists argue that preventive use of antenatal corticosteroids should be included among the measures adopted to improve prognosis for the newborns in late preterm period (34-36 weeks of gestation). **Objective.** The purpose of this study was to determine whether there is benefit from antenatal corticosteroids administration in neonates born in the late premature period. **Materials and method.** We conducted a retrospective study in our clinic analyzing the data recorded over the past two years. Two batches were formed depending on whether or not corticosteroids were given antenatally. Morbidity and mortality rates for each group were analyzed and compared. **Results.** During the study period, 3,357 live births were registered, of which 402 were premature (12%). The confirmation of prematurity was made by corroborating obstetrical data with Ballard Score. Of the 257 newborns considered as being born in the late preterm period, in 49 cases, representing 19%, antenatal corticosteroids were administered, especially when there were doubts about the actual gestational age. The incidence of admission in the neonatal intensive care department, as well as the morbidity due to different causes were significantly higher ($p<0.05$) in the preterm group who did not receive antenatal corticosteroids. **Conclusions.** Our findings suggest that administering antenatal corticosteroids to pregnant women at birth at 34-36 weeks is beneficial and could significantly reduce morbidity associated with late preterm birth.

Keywords: late preterm, corticosteroids

Twin pregnancy – specialized and individualized antenatal care improves perinatal outcome

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Although the incidence of multiple pregnancies is variable according to race, age and the parity of patients, there is a rising incidence of multiple pregnancy which is commonly related to one of the highest risk conditions faced in pregnancy. Maternal and fetal complications are increased from antenatal period to postpartum period, with the exceptions of post-term pregnancy and macrosomia. The most serious and common complication of multiple pregnancies is the preterm delivery, which increases the short and long-term perinatal morbidity and mortality. Others fetal complications are specific to and more frequently met in monochorionic pregnancies, such as discordant twin, twin-to-twin transfusion syndrome, twin reversed arterial perfusion sequence, twin anemia polycythemia sequence, single fetal demise and congenital anomalies, thus the diagnosis of chorionicity must be done early in the first trimester. From maternal perspective, a significant maternal hemodynamic change due to increase in cardiac output and plasma volume predisposes to physiological anemia in multiple pregnancies. A high incidence of hypertensive disorders of pregnancy has been observed in multiple pregnancies which in combination with the increase in plasma volume increases the risk of pulmonary edema in multiple pregnancies which further increases the risk of maternal morbidity and mortality. Moreover, labour complications are often encountered irrespective the delivery route. In postpartum period, atonic haemorrhage may occur due to overdistended uterus, therefore patients with multiple pregnancy have more risk of blood transfusion and its complications. Henceforth, specialized antenatal care is advocated in cases of multiple pregnancies to improve the maternal and fetal outcome by identifying these complications at early instance. In conclusion, prenatal care for multiple gestations should be provided by an experienced and dedicated staff that can anticipate and manage the various and complex problems presented by the multifetal gestation. This sort of specialization and individualization of antepartum care for multiple gestations provides the best opportunity to maximize intrauterine fetal growth, identify congenital anomalies, prevent extremely preterm or very low birth weight deliveries, and identify fetal or maternal complications that may necessitate more intensive fetal surveillance or even delivery to reduce the adverse perinatal outcome.

Keywords: twin pregnancy, maternal complications, perinatal morbidity and mortality

Cryopreservation of gametes and embryos – neonatal and obstetrical outcomes

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Cryopreservation of embryos has been for many years a well-established part of assisted reproduction technology (ART) with increasing delivery rates as reported by European and US registries. The pregnancy and live birth rates after cryopreservation have increased, and are now described to be close to or even higher compared with fresh cycles. In addition, both the increasing use of single-embryo transfer and the introduction of more effective cryopreservation techniques, such as vitrification, have made more embryos available for freezing and increased the use of cryopreservation of human embryos. Many studies have shown a similar or even better outcome for singletons after cryopreservation compared with singletons conceived after fresh cycles, while compared with singletons from spontaneous conception, the outcome has been less good. However, recently, higher rates of newborns being large for gestational age (LGA) and macrosomic (birthweight ≥4500 g) compared with both singletons from fresh cycles and singletons from spontaneous conception have been described. When stratifying for sex, we found that, although both boys and girls conceived after frozen embryo transfer had a higher risk of LGA compared with children conceived after fresh embryo transfer, the risk for boys was significantly higher. Singletons born after frozen embryo transfer have a lower rate of low birth weight and preterm birth compared with singletons born after fresh IVF and ICSI. We emphasize the need to expand cryopreservation techniques in Romania.

Keywords: IVF, cryopreservation, pregnancy

The prenatal diagnosis of placenta accreta spectrum

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Placenta accreta spectrum (PAS) – formerly known as morbidity adherent placenta – refers to the range of pathologic adherence of the placenta, including placenta increta, percreta and accreta. The maternal morbidity and mortality can occur because of the severe and sometimes life-threatening hemorrhage, which requires blood transfusion. There are several risk factors, the most common being a previous caesarean delivery, with the incidence of PAS increasing with the number of prior caesarean deliveries. Antenatal ultrasound diagnosis of PAS is highly desirable because outcomes are optimized when delivery occur at the level III maternal care facility before the onset of labor or bleeding and with avoidance of placenta disruption. The most important ultrasonographic association of PAS in the second or third trimester is the presence of placenta praevia. Gray-scale abnormalities that are associated with PAS include multiple vascular lacunae within the placenta, loss of the normal hypoechoic zone between the placenta and myometrium, decreased retroplacental myometrial thickness (less than 1 mm), abnormalities of the uterine serosa-bladder interface, and extension of the placenta into myometrium, serosa or bladder. The use of color flow Doppler imaging may facilitate the diagnosis. MRI is widely used to assist with the prenatal diagnosis of PAS. The MRI signs include abnormal uterine bulging, dark intraplacental bands on T2-weighted imaging, heterogeneous signal intensity within the placenta, disorganized placental vasculature, and disruption of the uteroplacental zone. The most generally accepted approach to PAS is caesarean hysterectomy with the placenta left in situ after the delivery of the fetus. The optimal management involves a standardized approach with a comprehensive multidisciplinary care team accustomed to the management of PAS. The help of the urologist for bladder during surgery has led to faster postoperative recovery, the decrease of hospitalization and ICU time, and to fewer cases of postoperative hematuria.

Keywords: placental abnormalities, placenta acretta, high risk pregnancy

Symptomatic placental chorioangioma. Case report and literature review

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Introduction. Chorioangioma is the most frequent benign placental tumor, with an incidence of 1%, usually small-sized and asymptomatic, tumors bigger than 5 cm and symptomatic being rarer. The diagnosis is made by ultrasound after the second trimester of pregnancy. **Materials and method.** We report a case of large placental chorioangioma, diagnosed in the second trimester of pregnancy, complicated by hydramnios and fetal anemia. The patient was primiparous, 34 years old, with a 25-week pregnacy, with IVF, and with inferior limbs edema and hepatocytolisis. The prenatal examinations showed no fetal abnormalities. The ultrasound showed anterior and fundal placenta with a tumor at the upper pole of 7.1/4.4/5.2 cm, vascularized with important arterial vessels, hydramnios and fetal anemia. The maternofetal consult contraindicated the fetoscopic ablation of the dominant vessel. The molecular karyotype showed no genetical abnormalities and the MRI confirmed the placental tumor, the certain diagnosis being establised histopathologically postpartum. **Results.** The management was conservative; due to large vessel we could not achieve fetoscopic ablation, we performed two *in utero* transfusions and two drainages of the excessive amniotic fluid, followed by C-section at 32 weeks, with the delivery of a healthy 2189 g baby. Both macroscopically and histopatologically, we confirmed the diagnosis – placental chorioangioma. **Conclusions.** Placental chorioangioma is a rare pregnancy pathology and should be taken into consideration for the differential diagnosis of the hidramnios, fetal anemia and non-imune fetal hydrops, the therapy being adapted to the sympthoms.

Keywords: symptomatic chorioangioma, hydramnios

Management of caesarean scar pregnancy

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Caesarean scar pregnancy (CSP) is a complication encountered in women having pregnancies after one or more previous caesarean deliveries. Its incidence varies between 1:1800 to 1:2200 pregnancies. The most important aspect is the diagnosis of CSP as early as possible, ideally around seven weeks of gestation. The failure to diagnose CSP could lead to a high risk of uncontrolled bleeding and hysterectomy, with increased morbidity and mortality. Many management strategies have been presented, ranging from medical (methotrexate) to surgical intervention. We recommend the use of Shirodkar cervical suture (to control bleeding) preceding transcervical aspiration of pregnancy.

Keywords: caesarean scar pregnancy, bleeding, pregnancy

ERAS protocol in caesarean section

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ERAS (enhanced recovery after surgery) is a guideline for perioperative care in caesarean delivery, covering the pre-, intra- and postoperative phases of this surgical procedure. All recommendations are evidence-based. The preoperative recommendations cover: antenatal counseling, meal up to 6 hours before surgery, skin preparation, antibiotic prophylaxis. The intraoperative management refers to: regional anesthesia, maternal hypothermia prevention, standard surgical technique, fluid management. The postoperative recommendations refers to: fluid management, antiemetic use to prevent nausea and vomiting, regular diet, pain control with nonsteroidal antiinflamatory drugs, venous thromboembolism prophylaxis. The recommendations for neonate include: delayed cord clamping, maintaining normothermia (covering the body/head), avoid routine suctioning of the airways, and routine neonate supplementation with room air.

Keywords: ERAS protocol, caesarean section

Intrauterine growth restriction – timing of birth?

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Introduction. Classically, intrauterine growth restriction (IUGR) is defined by the significant difference between some or all of the fetal biometric parameters and their values corresponding to the gestational age. Intrauterine growth restriction refers to fetal growth below the potential that the fetus would achieve under normal conditions, and which is most often caused by insufficient placental intake. **Objective.** In view of the increasing number of studies carried out on this topic, we consider it very necessary to publish a study that summarizes the specialized literature and presents it up-to-date, with the inclusion as main points of study of certain markers that guide the therapeutic behavior. **Materials and method.** The present work is a summary of the specialized literature, with the presentation of the results in a topical manner. The scanning of the international electronic database PubMed was performed using [IUGR] AND [DOPPLER] OR [FETAL DETERIORATION] as search scripts. **Results.** In this paper, it is considered important to make the differential diagnosis between SGA and IUGR, the diagnosis not being solely based on the Doppler analysis of the umbilical artery. Intrauterine growth restriction is based on Doppler analysis of the cerebral artery, on the cerebro placental index, and on the Doppler analysis of the uterine artery. In order to properly guide the clinicians in the elaboration of a diagnosis and the formulation of a conduit, a protocol was drawn up which divides the IUGR into four stages, presenting the optimal management in each case. **Conclusions.** The new data and classifications facilitate the elaboration of therapeutic decisions and reduce the variability of the treatment within this complex pathology.

Keywords: ultrasound, IUGR, Doppler

Laparoscopic isthmocele repair on a 9-week pregnant uterus

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An isthmocele – also known as a caesarean scar defect – is a long-term complication of caesarean sections, with an increasing incidence. Although often asymptomatic, it is a new recognized cause of abnormal uterine bleeding and a major risk factor for caesarean scar pregnancies or uterine ruptures in the subsequent pregnancies. Currently, there are no guidelines for the diagnosis and management of this condition. Several surgical techniques for the correction of isthmocele are proposed, including laparoscopic excision, vaginal repair, a combined laparoscopic-vaginal approach or, more recently, hysteroscopic resection. We present the case of a GII PI, 29-year-old patient with a previous C-section who presented in our clinic with a positive pregnancy test for pregnancy confirmation. The ultrasound examination revealed an intrauterine evolutive 9-week pregnancy and a caesarean scar defect. After counseling, the patient opted for pregnancy continuation and for laparoscopic correction of the isthmocele. The surgery was performed under ultrasound guidance. The defect was resected, and the uterus was closed with a continuous two-layer suture. No intraoperative or postoperative complications were present. The patient was discharged two days later, and the pregnancy is currently in evolution.

Keywords: isthmocele, niche, laparoscopy

Umbilical cord thrombosis, a rare cause of intrauterine fetal demise: a case report

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Introduction. The World Health Organization (WHO) estimates that yearly aproximately 2.6 million stillbirths appear on a global scale. Umbilical cord thrombosis is considered a rare cause of mortality with an estimated incidence of 1/1300 to 1/1500 pregnancies and in 1/1000 perinatal autopsies, with a slight male preponderance of 1.6:1. Umbilical cord compression, umbilical cord anomalies, as well as maternal diabetes have been described as favorable factors for thrombus formation. **Materials and method.** We present the case of a fetal intrauterine demise at 37 weeks of pregnancy due to umbilical vein thrombosis. **Results.** We report a case of a supervised pregnancy which resulted in an intrauterine fetal demise at 37 weeks of pregnancy. The entire pregnancy was supervised by a qualified obstetrics-gynecology specialist and the 25-year-old primigravida performed usual blood work, double marker test – Kryptor, morphologic exams, non-stress tests bimonthly, and TORCH profile, which had normal values. The oral glucose tolerance test was not performed by the patient, but the fasting blood sugar levels were in the normal range. Fetal demise was diagnosed during a scheduled check up at 37 weeks of pregnancy. Labor was induced with ocitocin and a male fetus was delivered vaginally 24 hours later. The trivascular umbilical cord was 60 cm, showing extensive thrombosis 20 cm proximally to the fetal insertion. **Conclusions.** The peculiarity of this case is represented by the fetal intrauterine demise at 37 weeks of pregnancy due to umbilical cord thrombosis, with no other major fetal anomalies present.

Keywords: umbilical cord, umbilical vein, thrombosis, intrauterine fetal demise

Women's perception on second-trimester ultrasound scan anomaly

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Introduction. Mid-trimester ultrasound scan anomaly has been included for almost two decades in the pregnancy surveillance in Romania, but it has become systematic in the last 10 years and nowadays it is a mandatory part of the pregnancy monitoring. In the past fifteen years, 3D and 4D ultrasound has undergone technical improvements, which contributed to an enhancement diagnostic accuracy when applied to the study of fetal malformations. *HDlive rendering* offers a realistic view of the fetus, which makes ultrasound images more noticeable to both clinicians and parents. For the majority of couples, the first time when they have the opportunity to see a 3D/4D scan of their baby is the mid-trimester anomaly scan, and this is the reason for which many patients call it the "3D/4D scan". **Materials and method.** A survey was conducted in our clinic in order to evaluate the perception of the pregnant women regarding the mid-trimester anomaly scan (3D/4D). **Results.** Future mothers look up for answers on the internet in 11.69% of cases, or ask friends and relatives (5.1%), while 83.3% of them ask their physician. In 48.6% of cases, pregnant women were concerned about possible malformations that could be revealed by ultrasound, and almost 20% of them admitted they would not know how to manage such a situation. There was no statistical significance regarding the anxiety amongst women with fetal abnormalities in a previous pregnancy and those with normal previous pregnancies or those at a first pregnancy. A percentage of 97.8% considered that they received all the information they needed, and 93.5% of the future mothers felt closer to the unborn child after the ultrasound. **Conclusions.** This analysis provided useful information regarding pregnant women's perception and expectations of the antenatal screening. The patients must be properly informed about the purposes of the diagnostic ultrasound, about its advantages and limitations, by a certified physician.

Keywords: diagnostic ultrasound, fetal malformations, 3D/4D scan

The impact of delivery mode on neonatal outcomes for preterm twins

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Introduction. The gestational age and various presentation combinations bring controversies related to the safest mode of delivery for twins. The prematurity is an additional complex factor that makes the birth decision more difficult. **Materials and method.** We searched Cochrane CENTRAL, Medline, Embase and Pubmed databases, beginning with July 2019, using research terms such as "prematurity", "twins", and "delivery mode". **Results.** Our initial research generated 45 articles, but after duplicate removal we obtained 21 titles and abstracts. The total number of premature twins before 36 weeks of gestations was 7,426 twins. The majority of them (63.8%) were born by caesarean section (CS), followed by 31.2% delivered vaginally, and 5% by combined vaginal birth/CS. The fetal morbidity was caused by severe neurological injury, bronchopulmonary dysplasia, retinopathy of prematurity, and necrotizing enterocolitis. The severe neurological injuries occurred in 0.77% of foetuses born by CS and in 1.2% of foetuses born by vaginal birth. Respiratory distress syndrome appeared in 1.34% of foetuses born by CS, and in 0.87% when both twins were delivered by vaginal way. There were no significant differences regarding fetal outcome between the first and the second twin, except for respiratory distress that was 23% more frequent for the second twin. The gestational age also had a great impact on neonatal outcome because the fetal morbidity was increased before 32 weeks of gestations. **Conclusions.** Preterm twin infants born by CS have less severe neurological injuries, but they experience more often respiratory distress syndrome.

Keywords: prematurity, multiple pregnancy, mode of delivery

Is ART a major risk factor for severe complications in pregnancy?

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Introduction. Since 1978, assisted reproductive technology (ART) has been used worldwide for the treatment of infertile couples. There have been many questions raised about the ART implication in severe pregnancy complications, beside prematurity, such as preeclampsia, gestational diabetes and bleeding disorders. Only recently there have been found sufficient proofs that ART is a risk factor for poor pregnancy outcome. **Materials and method.** We performed a literature review using the following research terms: assisted reproductive technology, ovulation induction, intracytoplasmic sperm injection, embryo transfer, *in vitro* fertilization, and pregnancy complications, from January 2005 to July 2019. A total of 48 studies regarding pregnancy complications were retained (meta-analyses, systematic reviews, randomized control trials/controlled clinical trials, and observational studies). **Results.** The most reliable studies came from USA and Asia, and found a strong association between ART and pregnancy complications. The majority of the studies referred to hypertensive disorders and preeclampsia associated with ART. Some meta-analyses demonstrate that ART pregnancies are at risk also for haemorrhagic complication at birth and gestational diabetes. The possible mechanisms involved in the ART risk complications are: underlying infertility-related disorders which also determine endometriosis, the drugs used for ovarian stimulation, gametes manipulations, transfer of multiple embryos, gametes donation. **Conclusions.** ART is now recognised as a risk factor for severe complications in pregnancy, and post-ART pregnancies need careful monitoring and counselling.

Keywords: assisted reproductive technology, preeclampsia, gestational diabetes, bleeding disorders

Corticosteroids for fetal lung maturation – effects and consequences

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Randomized trials performed worldwide have consistently reported a significant reduction in the incidence of respiratory distress syndrome (RDS) among infants exposed to antenatal corticosteroid therapy. In a 2017 systematic review of randomized trials comparing antenatal corticosteroid therapy versus placebo/no treatment in women at risk for preterm birth, antenatal corticosteroid therapy resulted in a reduction in RDS (relative risk [RR] 0.66; 95% CI; 0.56-0.77; 28 trials, 7764 infants), reduction in moderate to severe RDS (RR 0.59; 95% CI; 0.38-0.91; 6 trials, 1686 infants), and reduction in the need for mechanical ventilation. Secondary effects on fetal development and mostly on fetal brain, on long and short term, are under evaluation.

Keywords: fetal lung maturation, corticosteroids

Cervical cerclage and/or Arabin pessary in multiple pregnancies – our experience

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Introduction. Cervical cerclage is a surgical intervention involving placing a stitch around the uterine cervix. Arabin pessary is another way to increase cervical containment. Although their effectiveness and safety in asymptomatic multiple gestations remain controversial, their use, even combined, in cases of multiple pregnancy with threatened preterm labor, appears to be effective. **Materials and method.** This is a prospective analysis of 12 cases of multiple pregnancies in our clinic. The study group was composed of twin or triple (one) primigravida pregnancies with high risk factors for preterm labor. Cervical lenght and dilatation of internal cervical os were evaluated with transvaginal ultrasound in the second and third trimesters of pregnancy. We used Arabin pessary for cervical length between 25 and 15 mm with dilatation of internal os more than 10 mm (nine cases). When we found the cervix less than 15 mm, the procedure consisted of cervical cerclage followed by mounting a contention pessary (three cases). In three cases (two twin and the triple pregnancy), the cervical cerclaje and/or pessary were removed at 34 weeks due to premature labor. In the remaining cases (nine), these were removed at 36 weeks of gestation. **Results and conclusions.** All pregnant women have born healthy babies. There were no severe complications or adverse effects due to the application of this protocol. Although there was no control group in this study, we can say that cervical containment methods provide the prolongation of the pregnancy beyond 34 weeks, preventing serious neonatal mortality and morbidity.

Keywords: cervical cerclage, Arabin pessary, multiple pregnancy

IVF, myomectomy, triple embryo transfer, triple pregnancy, uterine rupture, neonatal death

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Myomectomy is a frequently performed procedure for many reasons, including as a part of fertility treatment. These patients, when pregnant, face additional pregnancy risks as a consequence of their pre-pregnancy treatment. For appropriate counselling of patients, it is prudent that the actual risks are conveyed to these patients. Women with multiple pregnancy, with laparoscopic myomectomy and post-IVF (*in vitro* fertilization) have a risk higher than average. With the current review, we aim to assist the audience to be able to make these decisions by providing a review of the current literature and presenting it in a clinically oriented, but critical way, thus allowing the individualization of treatment plans.

Keywords: myomectomy, IVF, uterine rupture

Follow-up of newborns with intrauterine transfusion (IUT)

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Intrauterine transfusion (IUT) is a procedure used in cases of severe anemia, which provides the foetus with blood via the umbilical chord. It is used as solely and most efficient therapy for the ad vitam prognosis of the foetus. **Objective.** Reporting the results of UIT performed on nine foetuses with severe anemia. **Materials and method.** Nine cases were studied between 2013 and 2018. Foetal echographic findings showed severe anemia by measuring the medial cerebral artery, using the value of maximal systolic velocity. The number of UITs varied between one and seven per case. The minimal gestational age for this procedure was 20 weeks. The minimal level of hemoglobin at which this procedure was initiated was 1.6 g/l in one case and between 2.7 and 5g/l in other cases. UITs were performed by echographic guidance, using O- red blood cells, while monitoring both the expectant mother and her foetus. **Results.** Out of nine cases, one deceased 48 hours after the first UIT, and the other eight were born through C-section programmed at the gestational age of 37-38 weeks. All newborns were suffering from compensated anemia at birth and developed precocious jaundice with moderated levels of indirect bilirubin. The treatment consisted in immunoglobulin, human albumin 5%, phototherapy, red blood cell transfusion, and erythropoietin. The evolution was favorable, with jaundice regression and normal red blood cell count by four months. The follow-up until the age of 1 year showed optimal neurodevelopment, according to age. **Conclusions.** UIT represents the gold standard therapy of severe intrauterine anemias with both short-term and long-term favorable outcomes.

Keywords: neonatal anemia, intrauterine transfusion, newborn

Value of ultrasounds markers in gestational diabetes follow-up

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Maintaining good glycemic control is the key intervention for reducing the frequency and/or the severity of complications related to gestational diabetes mellitus (GDM). Ultrasound examination must be done early in the third trimester in order to identify fetal growth acceleration, as this appears to be a sign of nonoptimal glycemic control. It is well recognized that women with GDM are at increased risk of stillbirth. The expert opinion generally recommends that women who require insulin or an oral antihyperglycemic agent to maintain euglycemia or who have poorly controlled blood glucose levels should be managed the same way as women with pregestational diabetes or other conditions placing the pregnancy at increased risk of adverse outcome. These women typically undergo periodic antenatal testing, usually initiated at approximately 32 weeks of gestation. Case by case, in our department there are used nonstress tests with an amniotic fluid index once or twice per week from 32 weeks, and fetal growth evaluation. In our experience, twice a week has a better result in follow-up, mostly in women at risk for complications.

Keywords: gestational diabetes, ultrasonography

Angiogenic factors and endothelial function in normal pregnancy and preeclampsia

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Angiogenesis occurs under both normal and pathological conditions and has an essential role in embryonic and placental development. One of the most important growth factors with a role in the regulation of the angiogenesis is the vascular endothelial growth factor (VEGF), which exerts its function after binding to three receptors, VEGFR-1 (vascular endothelial growth factor receptor 1; flt-1), VEGFR-2 (vascular endothelial growth factor receptor 2; KDR) and VEGFR-3 (vascular endothelial growth factor receptor 3; flt-4). The binding of the VEGF to the soluble VEGFR (sVEGFR or sflt-1) has an antiangiogenic effect. Under hypoxia conditions, as in the case of preeclampsia, there is a disturbance of the balance that exists between the proangiogenic and antiangiogenic factors, in favor of the antiangiogenic ones. Preeclamptic placenta overexpress sflt-1, which enters maternal circulation and binds VEGF. This binding determines reduced VEGF concentration, the occurrence of endothelial dysfunction and the limitation of nitric oxide production. At the end of pregnancy, it causes hypertension and proteinuria. There are known genetic variations that influence these processes with role in the appearance of the symptoms characteristic of preeclampsia. Sflt-1 levels could be used as a routine diagnosis test for preeclampsia to differentiate preeclampsia from other diseases and as a prognostic factor for iminent delivery in preeclamptic women. Also, sflt-1 could be a therapeutic target in the management of preeclampsia.

Keywords: preeclampsia, angiogenic factors

Caesarean section in premature separation of the placenta from the uterus

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Obiectives. The determination of the rate of caesarean section in cases of abruptio placentae. **Materials and method.** The analysis included a number of 10,800 deliveries during a period of three years in Craiova clinics, regarding severe forms of *abruptio placentae*. Theses cases took into consideration the age of the patient, the parity, the body weigh of fetuses, the way of delivery and the perinatal mortality. **Results.** There were 75 cases of abruptio placentae (0.69% of the total cases) in the last three years. In 60 cases, the delivery was by caesarean section (80%), with favorably prognosis for mother and foetus. The perinatal mortality was 15 cases (20% of the total cases of *abruptio placentae*), found dead before the hospital admission or at the vaginal delivery. **Conclusion.** Our results show the importance of the aggressive management with caesarean section in severe cases of *abruptio placentae*.

Keywords: premature separation of the placenta from the uterus, *abruptio placentae*

Prenatal testing – opening Pandora's box

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Objective. Prenatal testing holds a central role in pregnancy evaluation and monitoring. It unites different investigation methods to determine the best possible outcome and management of a case. This paper emphasises the importance of prenatal testing by presenting a case with multiple congenital anomalies. **Method.** We report a case diagnosed antenatally in the Imagistic Department of Obstetrics and Gynecology, ENDOGYN AM, and confirmed together with the University Prenatal Diagnosis Unit team. We used an extended fetal morphologic protocol. We correlated the antenatal data with the anatomopathological examination. Genetic tests were performed due to the possibility of genetic abnormalities. **Results.** The outcome of our case was unfavourable, due to the presence of multiple anomalies at the detailed morphological assessment. No genetic abnormality was found. The anatomopathological examination confirmed the antenatal fetal findings. **Conclusions.** Prenatal testing represents the most important pylon in pregnancy evaluation. Multiple tests should be performed for a correct case management.

Keywords: prenatal testing, fetal anomalies, ultrasound

Recurrent cervical haemorrhages after cervical uteri thromboses. A rare case of hereditary thrombophilia with heterozygous mutants of MTHFR and PAI-1 pregnancy associated. Case report and literature review

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A 30-year-old pregnant women, nullipara, with two embryos death, former Yaz® user (one year), without antiphospholipid antibodies, with prophylactic cervical cerclage at 19 weeks pregnancy, is readmitted in emergency at 21 weeks for heavy pelvic pains, and abundant vaginal blood loss, with cerclage suppression, and under tocolysis and progesterone she presents three new episodes of intense pains and red, pulsatile blood loss from different cervical areas at 24-36 hours after admittance, with mechanical hemostasis by nylon sutures at cervico-vaginal junction. The fourth episode is followed by severe anemia (Hb=6.03 mg/dL, Ht=18.32%), haemodinamic instability, coagulation disorders – hematomas, generalized petaechia, and at 24 hours after the last vaginal sutures she claims thoracic pains, dyspnoea, and cianosis. There are not registered fetal distress, placental abnormalities, cervical shortness below 2.5 cm or maternal heart abnormalities at the ultrasound examination. Thoracic computed tomography was not done, because the mother refused. After cardiologist consultation, it was appreciated a mild/moderate pulmonary thromboembolism, without deep legs venouos thrombosis, and it was initiated the continuous intravenous anticoagulant therapy – heparine 25.000 UI/day x 6 days, then fraxiparine in increased dosage continued to term, and during six weeks postpartum. The laboratory test confirmed the intravascular disseminated coagulation with secondary fibrinolysis, and positive for heterozygous mutants of MTHFR (methylene tetrahydrofolate reductase deficiency C677T and A1298C), and PAI-1 (4G). Caesarean delivery was performed at 37 weeks for foetal distress at labor onset, with the extraction of a girl, 3340 g weight, Apgar score = 7/8, with premature senescent placenta and thin umbilical cord. The postpartum evolution of the baby and mother was normal.

Keywords: thrombophilia, cervico-vaginal thrombosis, pregnancy

Very low birth weight. Abortion or preterm birth?

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Introduction and objective. Premature birth (PB) is a major public health problem, associated with perinatal mortality and increased morbidity, with a premature death risk 120 times higher than the newborn at term. This problem requires close collaboration between several branches of modern medicine, from obstetrics and neonatology to genetics, immunology and fundamental research. By preterm birth is meant the birth that occurs between 24 and 37 full weeks of amenorrhea. The American College of Obstetricians and Gynecologists (ACOG) estimated, in July 2014, that preterm birth occurs in 6-8% of pregnancies, of which 3% newborns weighing less than 1,000 grams. PB is one of the most important challenges of obstetrics, due to the increased incidence, but also due to the social, cultural, family and demographic impact. Also, the premature – especially the very small premature – is one of the great trials of neonatology, even under the conditions in which the modality of care of the premature has changed with the introduction of modern technologies and equipment. The term "age of fetal viability" defines the gestational age at which a fetus is able to survive outside the maternal organism. The objectives of the study are aimed at identifying and analyzing the risk factors: demographic, social and economic particularities; identifying the measures that can determine the removal of the etiological factors of premature birth; description of the demographic profile of mothers who gave birth prematurely from a socioeconomic point of view; the evolution of the fetuses according to the birth weight; assessing the impact of early detection of the risk of preterm birth; assessing the consequences of premature birth on the newborn; interdisciplinary collaboration between the obstetrician doctor and the neonatologist; establishing special therapy at birth and postpartum at premature birth to reduce morbidity and mortality; comparison and correlation of statistical data with international literature. **Methodology.** The method of the study involved a three-year follow-up of premature and term births, the etiopathogenic factors involved in premature birth, premature morbidity and mortality, compared with that of term births. At the base of the research is the personal contribution represented by a clinical study, for a period of three years, between 2014 and 2016, of the prematurity in the maternity of the Emergency Clinical Hospital "Sfântul Ioan" – Bucharest, insisting on the premature birth, the incidence of the etiopathogenic factors and psycho-behavioral factors involved in PB, morbidity and mortality of premature. The study was carried out based on the elements extracted from the observation sheets of the mothers, as well as from the observation sheets of the newborns. The structural features of the premature are associated with an increased risk of perinatal asphyxia, respiratory distress syndrome, persistence of the arterial canal, hyperbilirubinaemia, hypoglycaemia, hypothermia and sepsis, compared with term infants. **Results.** Of the total 6,040 births in the analyzed period, 319 were NPs, of which 37 faces weighing less than 1,000 g and 17 dead were born. The group comprised 319 patients admitted to the Maternity Obstetrics-Gynecology Section of Bucharest, the Emergency Clinical Hospital "Sf. Ioan", between January 2014 – December 2016. **Discussion and conclusions.** The consequences of prematurity are not only medical, but also social and economical, with a negative impact on the families involved. The premature needs special care efforts and incomparably higher costs than the term newborn care entails. In conclusion, following the study carried out, risk groups can be established among pregnant women who require special prenatal follow-up and prophylactic visa therapies to reduce the number of preterm births. Also, the study showed the need to establish special therapy at birth and post-partum in the case of preterm newborns, in compliance with current standards of perinatal care, in order to reduce neonatal morbidity and mortality.

Keywords: prematurity, legislation, costs

The use of Wrigley forceps in caesarean section – advantages and precautions

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Often, during caesarean surgery with cephalic presentations, without indications or labor – after segmental-transverse hysterotomy and amniotomy – at the intrauterine introduction of the operator's hand to "dislodge" the presentation, it "slips" upwards, intrauterine (floating fetal skull), making fetal extraction difficult, requiring considerable transabdominal pressure, "T" incisions, causing fetal and sometimes maternal (respiratory difficulties, costal fractures, etc.) distress. In such cases we used the Wrigley forceps applied to the fetal head, which is relatively easy to extract. The paper describes the technique of applying forceps on the fetal head in caesarean section and the advantages of this maneuver.

Keywords: caesarean section, Wrigley forceps

Maternal hemodynamics in twin pregnancy evaluated with impedance cardiography

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Introduction. Impedance cardiography (ICG) technique measures the variation in impedance that appears in thorax due to the physical contractile activity of the heart. Twin pregnancy is characterized by greater maternal hemodynamic changes than singleton pregnancy. **Materials and method.** We evaluated pregnant women in the last trimester of pregnancy using impedance cardiography technique. There were measured: the stroke volume (SV), the heart rate (HR), the cardiac output (CO), the ventricular ejection time (VET), the left ventricular ejection time (LVET), the thoracic impedance (Z_0), and the systemic vascular resistance (SVR). **Results.** Our study included a number of 40 pregnant women divided equally between twin and singleton pregnancies. Heart rate values in women with single fetus (median: 85 beats/min) was reduced significantly compared with twins (median: 100 beats/min), p=0.021. SV values in women with singleton (median: 64 ml) differed significantly versus twin pregnancy (median: 83 ml), p=0.010. Cardiac output in women with singleton was lower than in twin pregnancies (p<0.0001). The systemic vascular resistance was decreased in twin pregnancies compared to singleton pregnancies (p=0.023). **Conclusions.** Using ICG technique in the third trimester of pregnancy, we observed that SV, HR and CO were increased in twin pregnancy compared with singleton pregnancy, whereas systemic vascular resistance was decreased in twin pregnancies. Impedance cardiography can be a reliable technique to evaluate maternal hearth changes in twin pregnancy, but longitudinal studies are required to validate the results.

Keywords: ICG, twin pregnancy, singleton pregnancy, cardiac impedance

Perinatal mortality and morbidity in triplet pregnancies

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The aim of the study was to evaluate the perinatal and neonatal prognosis of foetuses resulting from multiple pregnancies with spontaneous triplets or obtained through assisted reproduction techniques. **Methodology.** A retrospective, longitudinal, descriptive study was performed, on 20 patients with multiple pregnancy with triplets, confirmed by first-trimester ultrasound, between January 2013 and June 2019. **Results.** Fifty-seven newborns were included, with an average weight of 1623 g (minimum 500 g, maximum 2200 g). The perinatal mortality was 3.5%. Most pregnancies were obtained after sterility treatments (75%), mainly *in vitro* fertilization (73.33%). Comparing the spontaneous pregnancies with those obtained through assisted reproduction techniques, no statistically significant differences were found between gestational age at birth, postpartum complications, birth weights or Apgar score at 1 and 5 minutes. 65% of the pregnancies were triamniotic trichorionic (TCTA), 20% were monochorionic (1 trichorionic pregnancy and 3 dichorionic), and 15% were dichorionic triamniotic (DCTA). 85% of pregnancies ended with the birth through caesarean section over 29 weeks of gestation (SG). DCTA pregnancies had a higher risk of perinatal mortality and morbidity than TCTA pregnancies. The most common complications were preeclampsia and death of a foetus *in utero*. No statistically significant differences were found regarding the occurrence of severe or moderate respiratory distress, anemia and intraventricular hemorrhage between TCTA and DCTA. **Conclusions.** Chorionicity is the most important factor for the prognosis of triplet pregnancies.

Keywords: triplet pregnancies, triamniotic trichorionic, dichorionic triamniotic

Recent considerations about peripartum cardiomyopathy

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Introduction. Peripartum cardiomyopathy (PPCM) was described first in 1937. Generically, it is very often known as heart failure (HF) associated with pregnancy. This syndrome had been less defined until 1971, when clear notes occurred about the peripartum period. **Materials and method.** We checked the most recent publications and guidelines related to peripartum cardiomyopathy. **Results.** The reported incidence of peripartum cardiomyopathy is around 1:1000 to 1:4000 live births in the United States, but is different according to geographic location. The pathology remained uncertain until advances in hormonal and genetic mechanisms development were reported. The theory that PPCM is the result of dilated cardiomyopathy idiopathic precipitated by the hemodynamic stress of pregnancy is unsustained because these hemodynamic changes reach their maximum at the end of the second or in the early third trimester before the peak of PPCM incidence. Clear diagnostic criteria should be applied for PPCM, and it still remains a diagnosis of exclusion. Timing and mode of delivery have to be made by a team approach with obstetrician, maternal fetal medicine specialist, cardiologist, anesthesiologist and neonatologist. Few authors consider caesarean delivery for obstetric indications, but the need for prompt delivery may influence the decision. A pulmonary artery catheter is rarely recommended for hemodynamic monitoring, but strict monitoring of fluid status is mandatory. Long-term and recurrent pregnancy prognosis depends on cardiac function recovery. **Conclusions.** Specific diagnostic criteria and precise guidelines should be used for peripartum cardiomyopathy.

Keywords: peripartum cardiomyopathy, pregnancy, heart failure

Obstructive sleep apnea in pregnancy

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Introduction. The pathological complex of sleep-disordered breathing (SDB) has clinical forms from mild snoring to the most severe form of SDB, known as obstructive sleep apnea. Obstetric patients are generally underrecognized as a population at risk for this pulmonary disorder. **Materials and method.** Using terms such as "sleep apnea", "pregnancy" and "obstructive pulmonary disease", we searched Medline, Embase and PubMed databases from the beginning to July 2019. **Results.** Our first research revealed 62 articles, and after duplicate removal we obtained 19 titles. SDB can be underdiagnosed in pregnancy because of the physiological maternal changes and factors, as the lack of screening tools or studies regarding the effects of pregnancy on SDB and perinatal follow-up. The management consist in analgesia with nonsteroidal anti-inflammatory agents. Sedating medications, such as anxiolytics, antiemetics, antihistamines and sleep aids, should be avoided because of sparingly with extreme caution in monitored settings, particularly when used along with opioids. Standing order for narcotics and basal dosing should be avoided, and patient-controlled systemic opioids should be used very cautiously. **Conclusions.** Pregnant women with a diagnosis of obstructive sleep apnea at delivery are at major risk of developing cardiomyopathy, pulmonary embolism, congestive heart failure, and in-hospital death. These effects are augmented in the presence of obesity. Postpartum, these women may have respiratory suppression and should be monitored.

Keywords: respiratory distress, pregnancy, sleep

Placental lesions detectable by ultrasound: a reason to worry?

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With the development of ultrasonography, many placental lesions have become detectable since the first trimester of pregnancy. Some of the most common placental lesions diagnosed by ultrasound are hypoechoic images, causing controversy over differential diagnosis and possible damage to the fetus. Placental lakes are anechoic lesions with a diameter ≥1 cm surrounded by placental tissue with normal echogenicity, being frequently diagnosed in the second trimester of pregnancy. Their incidence varies between 2.2% and 17.8%, usually without impact on fetal development. Subchorionic cysts are anechoic lesions, without Doppler signal, that can be detected from the first trimester. Their content differs from amniotic fluid and histologically there are detected perivillous fibrin desposits and X cells. The association with intrauterine growth restriction (IUGR) assumes: cyst count >3, diameter >4.5 cm or their location near the placental cord insertion site (PCIS). Echogenic cystic lesions (ECL) are hypoechoic lesions ≥1 cm in diameter, characterized by an echogenic crown and an irregular border. They may be correlated with IUGR and preeclampsia, histologically identifying predominantly as inter-villous thrombi. Other possible differential diagnoses should be considered: chorioangiomas, hydatiform moles, *placenta accreta*, and "vanishing twin". In conclusion, a wide range of placental lesions can be detected by ultrasound, with a variable echo over the development of the fetus. The antenatal diagnosis of these entities is of particular importance.

Keywords: placental cyst, placental lake, subchorionic cyst

Experience of Clinic I of Obstetrics and Gynecology from Târgu-Mureş regarding the use of Robson classification of C-sections

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Introduction. In 2015, World Health Organization proposed the TGCS (ten groups classification system), also called the Robson classification system, as a standard for assessing and monitoring caesarean operations. **Materials and method.** Beginning with this year, this classification has been introduced in Clinic I of Obstetrics and Gynecology from Târgu-Mureş. Retrospectively, the Robson classification was applied to births in 2018, and the results were compared with the results of the first semester of this year. **Results.** In 2018, the rate of C-sections was 29.52%, the smallest rate of the university clinics in the country, with a perinatal mortality of 2.01%. Starting with the year 2019, the perinatal indicators were analyzed quarterly. Without changing the protocols in the clinic, the rate of caesarean operations decreased to 26.88%, and perinatal mortality decreased to 0.97%. **Conclusions.** The standardization of caesarean statistics after the Robson classification allows the comparison of indicators between different obstetrical units of the same level, at the same time allowing for the monitoring of change in behavior over time in determining caesarean indication. It can be considered a great method for avoiding unnecessary caesarean operations.

Keywords: caesarean surgery, Robson classification

Estimation of fetal weight

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The estimation of fetal weight is one of the integral parts of obstetric practice as it guides the physicians for the route and timing of delivery. Optimal estimation of fetal weight is critical especially in the suspicion of small for gestational age (SGS) or large for gestational age (LGA) foetuses, because the appropriate management of these conditions decreases both perinatal mortality and morbidity. Additionally, the estimation of fetal weight is crucial in the management of extremely preterm foetuses for the management of neonatal complications. More than 30 formulas were developed for the calculation of fetal weight by ultrasonography. These formulas consisted of the combination of ultrasonographic measurements such as biparietal diameter (BPD), head circumference (HC), abdominal circumference (AC), and/or femur length (FL). The application of three-dimensional (3D) ultrasound for the assessment of fetal weight has come to practice in the last decade, but our knowledge is still limited on this topic. Furthermore, gestational age, extreme values of fetal weight (growth restriction or macrosomia), image quality, multifetal pregnancy, race, ethnicity, fetal examination, variability in fetal adiposity, fetal structural abnormalities and the operator experience may all affect the estimation of fetal weight. The performance of fetal magnetic resonance imaging (MRI) has been investigated in some studies with promising results. The physicians should choose patient-based approaches for the estimation of fetal weight in order to achieve favorable perinatal outcomes.

Keywords: fetal weight, ultrasonography, MRI

First trimester pregnancy-associated plasma protein A and free beta-human chorionic gonadotropin (beta-HCG) levels in intrahepatic cholestasis of pregnancy

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Introduction. Intrahepatic cholestasis of pregnancy (ICP) is characterized by acute onset pruritus, elevation of liver enzymes and increase in bile acids. This pregnancy-specific disease is related with adverse pregnancy outcome. The objective of this study is to compare the first-trimester biochemical markers between ICP and healthy pregnancies. **Materials and method.** In this retrospective study, 30 women with ICP diagnosis and 60 healthy pregnant women were analyzed in terms of β-human chorionic gonadotropin (β-hCG) and pregnancy-associated plasma protein-A (PAPP-A) levels. **Results.** The mean age, BMI and obstetric history were similar between groups ($p>0.05$ for all). The median gestational week at birth was 39 (37-41) and 37 (34-40) in ICP and controls ($p<0.05$). No difference was observed between birth weights (3300 g [2500-3970] and 3260 g [2360-4080]; $p=0.239$). There was no statistically significant difference in terms of PAPP-A and β-hCG levels between groups, while the mean PAPP-A level (2.18+1.1 versus 2.89+1.84) and MoM values (0.73+0.53 versus 1.05+0.49) were found to be decreased in ICP group. **Conclusions.** A decrease in PAPP-A levels in first-trimester aneuploidy screening may be a potential indicator of ICP in ongoing pregnancies. However, clinicians should remember that decreased levels may also be detected in healthy pregnancies.

Keywords: PAPP-A, beta-HCG, intrahepatic cholestasis of pregnancy

Acute episode of ulcerative colitis in pregnancy and subsequent fetal decompensation – case report

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Objective. Ulcerative colitis is a chronic inflammatory bowel disease, with multifactorial etiology, mainly determined by immunological and environmental factors. The purpose of this article is to describe an acute episode of ulcerative colitis, its management, and also the negative effects upon the fetus. **Case.** A 28-year-old secundiparous, at 34 weeks of gestation, presented to our clinic with acute mucous and bloody diarheea, cramping abdominal pain, being admitted with a diagnosis of preterm labour. Following sigmoidoscopy with biopsy and histopathological examination, a diagnosis of acute episode of ulcerative colitis was established, and a treatment with hydrocortisone, double antibiotic therapy and hydroelectrolytic repletion was administered, with initial favourable evolution. At 36 hours after admission, the patient's general status suddenly altered, and a magnetic resonance examination revealed toxic megacolon and acute fetal decompensation. The patient delivered through emergency caesarean section a live, hemodynamically and respiratory stable newborn. **Conclusions.** A multidisciplinary intervention is required in order to proper manage similar cases. The mother's and newborn's evolution was favourable under specific treatment.

Keywords: ulcerative colitis, pregnancy, fetal decompensation

Non-Hodgkin lymphoma in pregnancy and postpartum evolution of the mother and newborn – case report

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Objective. Lymphomas are a heterogenous group on neoplastic diseases, divided into two categories: Hodgkin lymphoma (HL) and non-Hodgkin lymphoma (NHL). Considering the small incidence of these diseases in pregnancy, the purpose of this article is to enhance the clinical management and postpartum evolution of both mother and newborn. **Case.** A 37-year-old patient, III GII P, with a six-week pregnancy, presents to our clinic with a sore throat and a palpable laterocervical tumor. Following biopsy and hystopathological examination, a diagnosis of non-Hodgkin lymphoma is validated. At 28 weeks of gestation, the patient starts chemotherapy with CHOP scheme (cyclophosphamide, doxorubicine, vincristine and prednisone), and at 39 weeks of gestation she delivers through caesarean section a live newborn, female gender, with a 3120 g weight, and Apgar score 8. At one week postpartum, the newborn is diagnosed with mild ventricular dysfunction based on the echocardiographic examination. Following a haemato-oncological consult, the patient adds monoclonal antibody anti-CD20 rituximab to her previous chemotherapy scheme, with a favourable evolution. **Conclusions.** Laterocervical and submandibular tumors are important clinical clues that lead to a presumptive clinical diagnosis of lymphoproliferative malignancies. A multidisciplinary team is required in order to proper asses and to quickly manage the case with an individualised treatment.

Keywords: non-Hodgkin lymphoma, pregnancy, postpartum evolution

Uterine scar pregnancy in a patient with quadruple uterine scar

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Introduction. The incidence of pregnancy on the uterine scar is 1/1800-1/2500 pregnancies, increasing in the last 20 years, with the increase of the caesarean section. **Case presentation.** A 34-year-old patient, at her fifth pregnancy, with four births by caesarean section in the past (the last one seven months ago), presented at the emergency room with reduced genital bleeding and hypogastric pain. Transvaginal ultrasound established the diagnosis of pregnancy on uterine scar, and a 5-week embryo with present cardiac activity. Methotrexate 1 mg/kg intramuscular was administered, the patient being reviewed after five days, when the cardiac activity was absent, with the persistence of peripheral vascularization at the level of the uterine scar. Uterine dilatation and curettage were performed, and the trophoblastic fragments were extracted under ultrasound control. Two days later there were confirmed the HCG regression and the ultrasound evacuation of the pregnancy from the level of the uterine scar. The risk factors for pregnancy on the uterine scar are: thin uterine segment below 5 mm, the ultrasound visualization of a gestational sac that protrudes into the bladder-vaginal space, and a history of irregular vaginal bleeding. **Discussion.** The early diagnosis allows for conservative treatment with better results, and the subsequent follow-up by early ultrasound on a new pregnancy is important. There is no consensus on the most effective treatment, the options including: administration of methotrexate, either locally, in the sac, or by systemic intramuscular treatment, uterine artery embolization, uterine and hemostatic uterine bleeding, or hysteroscopic excision that offers minimal complication rates. **Conclusions.** Pregnancies on the uterine scar are rare, but with increasing incidence, having a major impact on the woman's subsequent fertility.

Keywords: pregnancy, transvaginal ultrasound, uterine scar

Z scores and challenges in the diagnosis of fetal aorctic coarctation

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Introduction. Fetal aortic coarctation still represents a challenge even for the best sonographers, especially in the early forms of appearence. **Case presentation.** A secundipara, with a previous healthy child, presents for the first assesement with a 32-week pregnancy. The ecography showed: IUGR of minus 3 weeks, a significant discrepancy between the right and left ventricule, fibroelastosis of the wall in right ventricule, and a suspicion of aortic coarctation. The aortic isthmal diameter was measured immediately proximal to the insertion of the arterial duct in the transverse (three vessel and trachea) and sagittal view, and the ductal diameter was measured immediately before it entered the descending aorta in the same view. **Conclusions.** The Z-scores for the fetal aortic isthmus and arterial duct are measured in the three vessels and trachea view and for the isthmus in the sagittal plane. In suspected coarctation, these Z-scores and the isthmal to ductal ratio may help in longitudinal assessment of the aortic arch and help at the prenatal diagnosis of coarctation.

Keywords: sonography, fetus, aortic coarctation

Hepatitis B virus infection in pregnant women in the post-vaccine era

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Introduction. 20 years after the initiation of generalized vaccination of all newborns for hepatitis B virus (HBV), hepatitis B cases have decreased considerably, but have not disappeared. Epidemiological research in dynamics on the phenomenon is necessary. **Materials and method.** Study group: 205 patients diagnosed with chronic hepatitis with HBV (834 hospitalizations). Inclusion criteria: clinical, biological, serological, virological elements of positive diagnosis of chronic hepatitis with HBV. Tracking interval: 10 years (January 2005 - December 2014). **Results and conclusions.** The number of cases has decreased significantly compared to previous stages, which shows that vaccinating newborns was and is a valuable measure. There is a change in the dynamics of incidence and prevalence, but the maintenance of a number of cases despite vaccination can be explained by the transmission from mother to child. Although the total number of births is decreasing, the number of vertical transmissions of HBV is increasing.

Keywords: hepatitis B, pregnancy

Prothrombin G20210A mutation

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Introduction. The prothrombin G20210A mutation is the second most common inherited thrombophilia after the factor V Leiden mutation. Challenging clinical issues include the decisions regarding when to test for the mutation and how to manage individuals with the mutation, either in the setting of venous thromboembolism (VTE), or as an incidental finding. **Materials and method.** In this study, there were included a total of 1,607 women with a history of recurrent pregnancy loss, between January 2010 and June 2018, who were admitted to the infertility clinic with desire to increase fertility. **Results and conclusions.** Since the homozygous forms of the FVL-prothrombin gene mutations have low incidence and MTHFR mutation is similar to the healthy population, preconceptional thrombogenic gene mutations screening seems to be controversial.

Keywords: prothrombin, trombophilia, pregnancy

Prophylaxis of thromboembolic events in pregnancy and postpartum

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Introduction. The term thromboembolic disease has a meaning equivalent to that of the term venous thromboembolism (VTE). Deep vein thrombosis (DVT), pulmonary thromboembolism (PTE) and stroke are considered manifestations of the same disease - thromboembolic disease. Pulmonary thromboembolism is the second leading cause of maternal mortality globally after obstetric hemorrhage. In the United Kingdom, pulmonary thromboembolism is the leading cause of maternal mortality. The natural physiological changes that occur during pregnancy contribute to the increased risk of thromboembolism. These changes include increased production of coagulation factors, decreased production of natural coagulation inhibitors, and changes in the fibrinolytic system. **Materials and method.** The paper contains two clinical cases of DVT and a literature review on DVT prophylaxis in pregnancy and postpartum. The first case is of a 22-weeks pregnant woman with left ilio-femoral-popliteal DVT diagnosed with Doppler ultrasound, and the second case is a postpartum, 14-year-old woman with inferior vein thrombosis. None of the patients had antenatal follow-up. The two cases had a favorable prognosis after low molecular weight heparin treatment. According to the literature, the early identification of risk factors for DVT and the establishment of heparin prophylaxis prevent the occurrence of DVT both in pregnancy and postpartum. **Conclusions.** The onset of DVT in pregnancy and in postpartum is determined by multiple risk factors and changes occurring in the coagulation cascade. DVT prophylaxis, both in pregnancy and postpartum, is performed with low molecular weight heparin, for varying periods of time, depending on the severity of risk factors.

Keywords: prophylaxis, pregnancy, postpartum, TVP

Management of anticoagulant treatment in pregnancy associated with cardiac mechanical valve

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Introduction. The management of pregnant women with cardiac mechanical valves represents a real medical challenge, since the anticoagulant used must not cross the fetal-placental barrier, in order to avoid its teratogenic effect or the appearance of hemorrhages at the fetal level. Anticoagulants available for management include: vitamin K antagonists, unfractionated heparin (UFH) and low molecular weight heparin (LMWH). **Case presentation.** A IIIG IIIP, at 37 weeks of gestation, with twin bichorial pregnancy, the first fetus – pelvic presentation, the second fetus – transverse presentation, with intact membranes, pregnancy cholestasis, double scar uterus, heart valve prosthesis, DSA, chronic venous insufficiency, under chronic anticoagulant treatment with Clexane® 80 mg x 2/day, was admitted for non-systemic uterine contractions. With 36 hours before the intervention, the Clexane® is replaced by HNF with aPTT taken at five hours, and stopped with five hours before the intervention, resuming it five hours postoperatively. Favorable evolution after caesarean intervention, but on the fifth day after birth, the presence of a subperitoneal subaponevrotic hematoma is established. After the reintervention, Clexane® 0.6 ml x 2/day is decided, with a favorable evolution, without the need for a surgical reintervention. **Conclusions.** Until the 38th week, LMWH is administered. This can be replaced with warfarin from S13-S36. At birth, warfarin should be replaced with LMWH or UFH due to the severe risk of bleeding. LMWH (atiXa) and UFH (aPTT) should be stopped 24 hours before birth is scheduled. The normalization of fetal INR takes longer than the maternal one. Postpartum rapid reintroduction of maternal anticoagulant therapy may lead to a major risk of bleeding.

Keywords: cardiac mechanical valve, anticoagulant, fetal-placental barrier

Infantile hemangiomas: prenatal indirect signs of diagnosis and psychological aspects

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Vascular lesions encountered in newborns may be vascular tumors or vascular malformations, both with intrauterine development and present at birth. Congenital hemangiomas are the most commonly encountered vascular tumors in newborns. If the hemangiomas are characterized by spontaneous regression, the vascular malformations persist or even have an ascending tendency consistent with the fetal or neonatal growth. The size of the vascular lesions is directly proportional to the frequency of the indirect signs, such as cardiac signs of vascular redirecting, from the arrhythmias to the heart failure, with the unfavorable prognosis and with the rate of its complications. We present, comparatively, a case of congenital planar hemangioma extended to the level of the hemiface, frontal, temporal and parietal right area, without diagnosis or signs of prenatal suspicion in a male fetus, with the weight appropriate for the gestational age, who began to present, insidiously, at 32 weeks of gestation, arrhythmia, respectively extrasystoles, with a frequency of 4\1, persistent until birth and in the neonatal period, and a case of Galen aneurysmal malformation, diagnosed prenatally at 28 weeks of gestation, with progressive intrauterine evolution and with important cardiac impact, respectively right heart failure with tricuspid regurgitation and dilation of the right atrium. The importance of prenatal diagnosis of hemangiomas, especially of the extended ones, prominent and characterized by fragility, is given by the justification of the signs of cardiac dysfunction and by the choice of the method and the opportune moment of the birth and, not lastly, by the psychological preparation of the future parents. In the case of vascular malformations, respectively vascular aneurysms, the postnatal cardiac decompensation is imminent, and the prenatal diagnosis offers the advantage of preparing the appropriate multidisciplinary management.

Keywords: hemangioma, aneurysm, prenatal

Determination of fetal sex during ultrasonography

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Estimating the fetal sex is a routine part of prenatal screening for many healthcare facilities. Although it is mostly performed for parental curiosity, the estimation of fetal sex may be vital in the context of ambiguous genitalia or X-linked diseases. Thus, a non-invasive, practical and inexpensive method is necessary in order to provide the optimal perinatal care for the patients. Fetal gender can be determined at earlier weeks of gestation due to the advances in ultrasonographic screening technologies. The accuracy of fetal sex determination reaches up to 98.8-100% when it is performed after 20 weeks of gestation. On the other hand, this rate is less than 30% when it is performed before 11 weeks of gestation and 75% when it is performed between 11 and 12 weeks of gestation. The first described and widely used method for the estimation of fetal sex in the first trimester is the angle of the genital tubercle. This method has high sensitivity when performed after 13 weeks of gestation. However, it has some limitations between 11 and 12 weeks of gestation. Sexual morphogenesis starts from the 6th week of gestation and it is mostly hormone dependant. For this reason, investigators have been working on new techniques for the determination of fetal sex at earlier weeks of gestation. A novel method, anogenital distance, has come to practice with promising results. The assessment of anogenital distance for fetal sex determination in the first trimester may be a good alternative for the physicians.

Keywords: fetal sex, anogenital distance

Recent developments in the management of early fetal growth restriction

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Early intrauterine growth restriction (fetal growth restriction before 32 weeks of gestation) is a relatively rare but severe condition. Important progress has recently been made in the understanding, diagnosis and treatment of early intrauterine growth restriction (IUGR). We present our experience in the Filantropia Clinical Hospital with early IURG and the influence of recent studies (such as TRUFFLE) on our management of fetal growth restriction. We studied the IUGR cases where the pregnancies ended before 32 weeks of gestation (either premature delivery, or intrauterine fetal death), from 2010 to 2018. Intrauterine and neonatal mortality were low in our series. Our results show that the treatment of early IUGR can be successful in settings with good quality fetal medicine, obstetrics and neonatology services.

Keywords: fetal growth restriction

Fetal precordial veins anomalies – imagery and prognosis

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The structural anomalies of the precordial veins represent a less explored territory of fetal pathology. Abnormal development of the fetal venous system can originate from any of the four embryonic systems: the umbilical, vitelline, cardinal, and pulmonary. While anomalous pulmonary venous return is difficult to diagnose prenatally and often has serious consequences on the postnatal circulation, the anomalies of the precordial veins can be seen on fetal ultrasound scans and rarely have unfavourable prognosis. Heterotaxy is often associated with precordial veins anomalies (e.g., interrupted vena cava). We present the imagistic appearance and the prognostic significance of some of the fetal precordial veins anomalies.

Keywords: precordial veins, structural anomalies

First-trimester ultrasound in the context of cffDNA analysis for aneuploidies

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Our aim is to discuss the role of the first-trimester ultrasound in the context of cffDNA analysis for aneuploidies. The progress in early ultrasound examination of the fetal structure has been driven by the practice of systematic assessment of the first-trimester ultrasound markers for aneuploidy. The combined (ultrasound and biochemical) first-trimester risk assessment for aneuploidies will foreseeable be replaced by the analysis of the cell free fetal DNA (cffDNA) from maternal blood. Nevertheless, first-trimester ultrasound will maintain an important role in the prenatal diagnosis. First-trimester assessment of the fetal morphology is becoming a standard in antenatal care. Early risk assessment for preeclampsia will likely remain dependent on the ultrasound evaluation of the uterine blood flow. As the methods of genetic analysis to detect submicroscopic DNA anomalies and gene mutations become more available to clinical use, increased nuchal translucency might develop into an independent indication for detailed prenatal genetic testing.

Keywords: first trimester, ultrasound, cell free fetal DNA

The role of ultrasound in assisted human reproduction

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Introduction. The rapid development of the ultrasound diagnosis can be followed in each area of assisted reproduction. The rapid increase in the number of interventions, the collection of oocytes by intravenous narcosis, the follow-up in the outpatient clinic by transvaginal ultrasound, as well as the development of the interventions coordinated by ultrasound in the *in vitro* fertilization program, became a simpler and safer method. **Materials and method.** In addition to the hormonal biochemical determinations through the parallel introduction of folliculometry, it became possible to study the dynamics of follicle maturation, the exact measurement of the number of follicles, as well as the correct establishment of the echocardiographic ovarian puncture time. **Results.** By determining the level 17 beta-estradiol (E2) and follicular number, it became possible to reduce the risk of ovarian hyperstimulation syndrome. The footprint and thickness of the uterine mucosa, the endometrial volume, the number of contractions, as well as the measurement of the subendometrial vascularization, present useful information in the signaling of receptivity. **Conclusions.** Ultrasound-coordinated embryo transfer significantly increases the efficiency of *in vitro* fertilization treatments, as well as increasing the rate of clinical pregnancies and, implicitly, the number of newborns. Transvaginal ultrasound examination performed at the beginning of the cycle, determining the number of antral follicles, as well as determining the current level of the basal hormones (FSH, LH, E2), together with the level of the anti-müllerian hormone, have an exclusive role in determining the ovarian reserve and in the personalized ovarian stimulation.

Keywords: ultrasound, *in vitro* fertilization, folliculometry

Differential diagnosis between primary endocervical and endometrial adenocarcinoma after AGNOS and H-SIL Pap smear result

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Cervical cancer is the second most common cancer worldwide and the presence of endocervical disease may be important in guiding the decision between ablation and excisional treatment. **Objective.** To evaluate the performance of IHC markers in differentiating between primary endocervical (ECA) and endometrial adenocarcinoma (EMA). **Materials and method.** Our study was conducted in the Obstetrics and Gynecology Clinic of the Municipal Clinical Hospital of Craiova and at the Department of Pathology of the University of Medicine and Pharmacy of Craiova, between September 2014 and December 2018. The evaluation in this study was made for 64 postmenopausal women who had cervical dysplastic changes (AGNOS or H-SIL) at PAP smear sampling. Colposcopy followed by endocervical curetage and endometrial biopsy were performed. We used three immunohistochemical markers to detect the origin of carcinoma: estrogen receptor (ER), vimentin (Vim) and p16. **Results.** 78% of H-SIL and 43% of AGNOS cytology were confirmed as adenocarcinomas. Out of 64 cases, 24 were primary ECA and 40 were primary EMA. ER and Vim were significantly expressed in EMAs while p16 were significantly expressed in ECAs. **Conclusions.** Immunohistochemistry is an essential tool when clinical and histopathological evaluation is not effective in discriminating primary endocervical adenocarcinoma and endometrial adenocarcinoma.

Keywords: IHC markers, AGNOS or H-SIL, adenocarcinoma

Holoprozencephaly

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In early brain development, the prosencephalon is divided into telencephalon and diencephalon. In the case of holoproencecephaly (HPE), it is no longer completely divided into two separate brain hemispheres and into the structures underlying the diencephalon. HPE is the most common brain development anomaly, with a prevalence of 1/16,000 live births and an incidence of up to 1:250 conception products. The etiology of HPE is very heterogeneous. Numerous metabolic and environmental factors have been incriminated, such as: type 1 diabetes and maternal alcoholism, with a risk that is cumulative with smoking; prenatal exposure to drugs (retinoic acid, cholesterol biosynthesis inhibitors) or infections (cytomegalovirus, toxoplasma, rubella). HPE may be associated with malformative syndromes with normal karyotype (Smith-Lemli-Opitz, Pallister-Hall etc.), may be caused by chromosomal abnormalities (trisomy 13, 18, triploidy), or may be a solitary manifestation. Three levels of severity are described in ascending order: lobar HPE, with varying degree of fusion of the frontal structures, semilobar HPE, with partial hemispheres separation, and the most severe form, allobar HPE, with only one cerebral ventricle and no interhemispheric fissure. Another subtype of HPE which is less severe is the middle interhemispheric variant (MIHF) or syntelencephaly. Brain malformations are generally associated with facial abnormalities, from anophthalmia, cyclopia or proboscis to a simple hypothelorism or even without abnormalities in mild forms. It can be said that facial anomalies often predict brain abnormalities. The most severe cases of HPE are detected by ultrasonography and MRI scan during pregnancy. Prenatal diagnosis often leads to termination of pregnancy after genetic counseling. The milder cases of HPE are not diagnosed prenatally due to the normal macroscopic brain, and for some less severe forms (lobar HPE, MIHF), MRI scan is required to establish the diagnosis. It is clear that the outcome of neurodevelopment and the risk of death depend on the severity of HPE. The prognosis in HPE also depends on the etiology and is more reserved for those with cytogenetic abnormalities, with only 2% surviving over a year.

Keywords: holoprozencephaly, brain malformations, MRI scan

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