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# Ginecologia **4**510





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# Uterine fibroids in pregnancy: clinical challenges and outcomes. Case report and literature review

Arina Banu<sup>1</sup>, Andrei Manu<sup>1,2</sup>, Cătălin-Bogdan Coroleucă<sup>1</sup>, Cristina-Maria Iacob<sup>1</sup>, Elvira Brătilă<sup>1,3</sup>, Ciprian-Andrei Coroleucă<sup>1,3</sup>

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**Background.** Uterine fibroids are frequent benign tumors in women of reproductive age. Their intersection with pregnancy can result in multifaceted challenges. Materials and method. This paper presents a complex case of a 34-year-old pregnant woman with significant fibroids, alongside a literature review on the implications and management of fibroids during pregnancy. Results. A 34-year-old primigravida with a fibroid uterus was diagnosed with a 6 weeks and 3 days pregnancy. Her pathological history included a prior fibroid embolization. Ultrasound revealed multiple fibroids, the largest being an intramural isthmic posterior nodule measuring 5.4/4.7 cm. The pregnancy was complicated with multiple hospital admissions for bleeding and pelvic pain, and the noted fibroid enlarged to 8/7 cm. At 31 weeks and 1 day, an emergent caesarean section was performed due to acute fetal distress, resulting in the birth of a male infant weighing 1230 g, with an Apgar score of 7. Concurrently, multiple myomectomies were performed. Uterine fibroids can influence fertility and pregnancy outcomes. While many remain stable in size during pregnancy, some might enlarge, predominantly in the first trimester. Myomectomy – the definitive treatment – is typically reserved for the postpartum period, due to surgical risks. **Conclusions.** Uterine fibroids present significant challenges during pregnancy, necessitating careful monitoring and timely interventions. Although caesarean myomectomy is fraught with risks, in specific circumstances it can be safely undertaken. This case underlines the importance of individualized management, balancing both maternal and fetal well-being.

**Keywords:** leiomyoma, pregnancy, myomectomy, pregnancy surgery, prenatal diagnosis, uterine conditions, ultrasound

#### Thrombocytopenia in pregnancy

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Thrombocytopenia is found in 7-12% of pregnancies, being the second main cause of blood disorders in pregnancy, after anemia, and represents a low platelet count below 150,000/ $\mu$ L. Pregnant women are more commonly diagnosed with platelet disorders during pregnancy, because the screening is done as part of the initial clinical evaluation with repeated blood counts. Thrombocytopenia can result from a wide range of conditions, many of them being related to pregnancy. Gestational thrombocytopenia is a diagnosis of exclusion. It is frequently asymptomatic, usually occurs in the second half of pregnancy in the absence of a history of thrombocytopenia outside of pregnancy, and the platelet count spontaneously returns to normal levels in the first two months postpartum. Gestational thrombocytopenia is not associated with maternal or fetal risks and does not require further investigations, except for periodic blood count monitoring.

Keywords: thrombocytopenia, pregnancy, anemia

#### Artificial intelligence and in vitro fertilization

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Introduction. Artificial intelligence (AI) has made significant advancements in various fields of medicine and healthcare, including in vitro fertilization (IVF) applications. IVF is a complex and expensive procedure used to assist individuals and couples in achieving pregnancy when natural conception is challenging. Artificial intelligence can enhance various aspects of in vitro fertilization, from improving success rates to optimizing the entire process. This presentation aims to provide an overview of AI applications and techniques and offer insights to IVF practitioners regarding the clinical and technical considerations involved in adopting artificial intelligence in the field of artificial reproductive techniques. Materials and method. The search was done across PubMed, from 2018 up to August 2023. The included articles were those written in English. The search terms used across database for the study were: "AI model" OR "Artificial Intelligence model" AND "embryology" OR "IVF" OR

"sperm". **Results.** Artificial intelligence models showed potential when compared to a visual assessment by an embryologist. On average, these models predicted the probability of a successful clinical pregnancy with higher accuracy than clinical embryologists, indicating increased reliability compared to human predictions. Artificial intelligence algorithms could be trained to provide a reliable sperm selection process, improving embryo and pregnancy outcomes, and also to make predictions of trigger day or continuation of the stimulation process. Conclusions. Artificial intelligence has a great potential in IVF applications, and it should complement the expertise of fertility specialists and embryologists. Additionally, ongoing research and clinical trials are essential to validate the effectiveness and safety of AI-driven solutions in the field of in vitro fertilization.

**Keywords:** artificial intelligence, machine learning, embryo, embryology, IVF, embryo selection

#### Metabolic disorders in prenatal diagnosis

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**Background.** Inherited metabolic diseases are due, generally, to enzymatic defects that occur as a result of unique or multiple genetic mutations. Metabolic diseases cause an increased level of a chemical compound in upstream, respectively the decrease of another downstream of the deficient metabolic chain. Protein, carbohydrate, metals or fatty acids metabolism may be affected. All can lead to severe fetal development defects and, sometimes, to various complications in pregnancy. Methodology. This study is a systematic review. Searches were performed of MEDLINE, PubMed and the Cochrane Database to identify articles and randomized controlled trials related to the study objective. Discussion. Currently, the standard method for prenatal diagnosis of metabolic diseases in pregnancy is the detection of genetic mutations in cells extracted from amniotic fluid or chorionic tissues. Even though they are generally very rare, metabolic diseases raise various questions related to diagnosis and management. Amino acid synthesis defects can lead to microcephaly, brain malformations, or neural tube defects. Women with phenylketonuria may have spontaneous abortions, IUGR, fetal cardiac and brain malformations. Cystic fibrosis is characterized by meconium ileus, liver disease and cardiac malformations. Smith-Lemli-Opitz syndrome is an autosomal recessive disorder comprised of recognizable facial abnormalities and multiple congenital anomalies. In Zellwegger syndrome, we can find at the ultrasound screening an enlarged liver and kidneys, and characteristic facial features. Conclusions. Some inherited metabolic diseases can cause significant complications during pregnancy, affecting the mother and/or the fetus. Obstetricians should be aware of the potential complications and carefully consider how to best manage these conditions. For metabolic diseases in which the risk of complications is known, the optimal treatment can lead to a good fetal and maternal outcome.

**Keywords:** metabolic disorders, phenylketonuria, cystic fibrosis, Smith-Lemli-Opitz syndrome, Zellwegger syndrome

#### Medicine at the border - case series

#### Monica-Mihaela Cîrstoiu, Natalia Țurcan, Ruxandra Albu, Delia Grădinaru, Alexandru Baroş

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Obstetricians and gynecologists are most likely to be sued among all physicians. According to a study, about 85% of all obstetricians reported having being sued during their career. A protocol-based approach allows for a systematic management to a condition, to make sure serious mistakes and variations are not made in treatment, and to ensure that correct investigations are asked for, a contemporary well-documented method of treatment is instituted, and cost effectiveness is maintained. However, an ideal protocol that can be adopted universally is nonexistent. We present a series of particular cases where an adapted management was required. This includes debates on management of placenta accreta spectrum cases, partial hydatiform mole cornual residual tissue and term uterine rupture after interventional hysteroscopy. The presented cases are of an atypical clinical appearance. The results obtained after the particular management is applied highlight the fact that it is not possible to predict which of the women will experience a life-threatening complication and that a correct diagnosis and timing are critical in preventing maternal and newborn deaths.

Keywords: protocol, adapted management

#### Chronic hepatitis B in pregnant women: current trends and approaches

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Chronic hepatitis B virus (HBV) infection affects about 350 million individuals worldwide, with half of them acquiring the infection either perinatally or in early childhood, especially in endemic areas. The management of hepatitis B virus infection during pregnancy remains a challenge and involves various aspects of maternal and fetal care. The aim of this review is to present the current knowledge regarding pregnancy and HBV infection, as well as recent efforts to reduce the rate of mother-to-child transmission (MTCT). Although, in most cases, acute or chronic HBV infection in pregnancy is similar to that in the general adult population, testing for HVB is recommended in every pregnancy, regardless of the previous testing or the vaccination, due to a higher incidence of low birth weight, prematurity, as well as gestational diabetes mellitus and antepartum hemorrhage reported in pregnancies with chronic maternal HBV infection. The identification of HVB positive pregnant women remains the most effective way to prevent HVB transmission to newborns, combined with passive and active prophylaxis at birth. Breastfeeding is not contraindicated for HVB patients, but it is not recommended for women to take antiviral drugs, due to the potential teratogenic effect on the fetus. Finally, there remains no clear evidence that elective caesarean section reduces the risk of mother-to-child transmission compared to vaginal delivery.

**Keywords:** hepatitis B, pregnancy, mother-to-child transmission, immunoprophylaxis

#### Management of patients with dysmorphic uterus

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Introduction. The development of the female reproductive system involves a series of complex processes characterized by the migration, differentiation, fusion and canalization of the Müllerian duct system. Dysmorphic uterus (T-shaped and infantile) is part of the uterine anomalies associated with adverse reproductive outcomes, such as infertility, recurrent miscarriages, premature birth, implantation failure during in vitro fertilization, and ectopic pregnancy. Methodology. A research of PubMed, MEDLINE and Embase was performed using the search terms "dysmorphic uterus", "uterine anomalies", "infertility", "Müllerian ducts", "3D ultrasound" and "hysteroscopic treatment" to identify randomized controlled trials and observational studies. **Results.** The European Society of Human Reproduction and Embryology (ESHRE) and the European Society for Gynecological Endoscopy (ESGE) recognize the clinical significance of Müllerian duct anomalies and they have developed a new updated classification system through a structured Delphi procedure. Uterine anomalies are classified as follows: U0 - normal uterus; U1 - dysmorphic uterus (infantile or T-shaped); U2 – septate uterus; U3 – bicorporeal uterus (partial and complete, bicornuate and didelphys); U4 – hemi uterus (unicornuate); U5 – aplastic uterus; U6 – unclassified cases. For the screening of uterine anomalies, we use 2D ultrasound and hysterosalpingography. However, 3D ultrasound has now become the diagnostic modality of choice for uterine anomalies, due to its high degree of diagnostic accuracy and to the fact that it is less expensive. **Conclusions.** The most appropriate management for women with dysmorphic uterus should nowadays be hysteroscopy. Hysteroscopy is a simple and quick treatment method, without postoperative complications, and accessible to everyone. The dimensions of the uterine cavity correlate positively with the implantation in case of pregnancies obtained spontaneously or *in vitro* fertilization.

**Keywords:** dysmorphic uterus, uterine anomalies, infertility, Müllerian ducts, 3D ultrasound, hysteroscopic treatment

# Enhanced recovery after surgery – evidence-based approach in patient outcome after surgery

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Enhanced recovery after surgery (ERAS) is a perioperative evidence-based concept aimed at minimizing the surgical stress and at achieving early recovery for patients undergoing surgery. It involves the collaboration and communication between both surgical and anesthesia teams, it is applicable to all surgical specialties, and it has been shown to improve patients' outcomes. Despite all the evidence for the support of ERAS, it has not been widely adopted. Implementing the process of ERAS challenges the dogmatic perioperative practices related to nutrition, fasting, pain management and antibiotic use, and it faces multiple barriers, most common being outdated medical concepts, lack of patient communication, lack of engagement, and poor leadership. Furthermore, the general practice of current healthcare practices regarding antibiotics has led to our current crisis of rising antibiotic resistance. In our opinion, some of these barriers have simple solutions that can be easily put in practice, and evidence-based medicine has proven the sustainability and beneficial outcomes after implementing the ERAS pathways. For long-term success, we hope that this approach will rise awareness into the younger medical healthcare providers to put into question the outdated medical concepts and practices in order to implement at their workplace the evidencebased guidelines of ERAS.

**Keywords:** ERAS, perioperative care, antibioprophylaxis, fasting, patient outcome

#### Vulvar pathology – at the border between specialties

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**Introduction.** Vulvar pathology frequently requires the involvement of several medical specialties (gynecology, dermatology, plastic surgery) for a correct and individualized management of each patient. One of the diseases with important consequences is lichen sclerosus, which can greatly affect a woman's quality of life, through local discomfort, progressiveness and through the impact on sexual life. Methodology. We start from presenting three clinical cases (a 13-year-old amenorrheic girl, a 34-year-old nulligesta nullipara, and a 55-year-old lady during the second menopausal year), scoring the diagnostic criteria and the therapeutic options. Results. Lichen sclerosus occurs more frequent in the anogenital area. The usual major symptoms are vulvar pruritus, anal discomfort, sexual dysfunction (dyspareunia, diminished sexual sensations progressing to anorgasmia) and dysuria. The patients may be asymptomatic, but during the inspection of the vulvar region, we may observe several characteristic muco-cutaneous findings: the white, thin and wrinkled skin and, also,

architectural changes of the vulva (loss of portions or all of the *labia minora*, burying of the clitoris). We may also detect fissures at the fourchette, at the clitoris, or in the interlabial folds. Secondary to scratching, we observe excoriations and lichenification, and also edema of the labia minora and the prepuce. Biopsy is sometimes necessary, when the diagnosis is uncertain (usually, a punch biopsy). It is important to diagnose other autoimmune diseases or concomitant vulvar infections (bacterial or fungal). Of clinical importance is the increased risk for developing vulvar squamous cell carcinoma (SCC). The treatment objectives are the resolution of symptoms, as well as the resolution of signs of active disease, reducing scarring and progression to vulvar SCC. **Conclusions.** Because lichen sclerosus may result in physical dysfunction, disfigurement and an impaired quality of life, it is important to promptly diagnose and treat all patients, with the specified purpose of preventing the disease progression.

Keywords: lichen sclerosus, vulvar pruritus, dyspareunia

#### Parietal endometriosis

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**Background.** Parietal endometriosis is a rare condition defined by the presence of endometrial tissue in the muscles of the abdominal wall and in the subcutaneous tissue. Generally, patients present with localized catamenial abdominal pain with or without palpable abdominal tumor. The diagnosis can be challenging, as endometriomas can be confused with granuloma, hematoma, hernia or cancer. Materials and method. We submit a prospective study conducted between January 2020 and December 2020 in which 146 patients diagnosed with endometriosis were treated in our clinic. Out of these cases, parietal endometriosis was identified in 11 patients. Results. In 7.53% of the patients diagnosed with endometriosis, parietal endometrioma was found. The mean age of the patients was 35 years old. The patients presented with abdominal pain and palpable mass. The majority of the patients received COC/dienogest for three to six months, without a significant improvement of the symptoms and with no influence on the size of endometriomas. Thus, these patients underwent complete local excision of the masses. The histopathological examination confirmed, in all cases, the diagnosis of parietal endometriosis. Forty-five percent of them also associated deep infiltrating endometriosis, and they were treated accordingly. In three cases, the aponevrotic defect was closed using a soft mesh. Furthermore, we can report two cases of complications consisting of postoperative seroma. The recurrence rate was null, and the symptoms regressed completely in all cases, with no need of postoperative therapy. **Conclusions.** Even though parietal endometriosis is considered a rare condition, practice has shown us that its prevalence is rapidly increasing, due to the high number of caesarean sections. Therefore, parietal endometriosis should always be a part of the differential diagnosis of abdominal masses found in fertile women.

**Keywords:** parietal endometriosis, deep infiltrating endometriosis, caesarean section, differential diagnosis

#### Sex cord-stromal tumors of the ovary – case report and literature review

Cristina-Maria Iacob<sup>1</sup>, Andrei Manu<sup>1,2</sup>, Cătălin-Bogdan Coroleucă<sup>1</sup>, Arina Banu<sup>1</sup>, Elvira Brătilă<sup>1,3</sup>, Ciprian-Andrei Coroleucă<sup>1,3</sup>

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Background. Sex cord-stromal tumors of the ovary are uncommon neoplasm that include a variety of histologic subtypes and different biological behaviors. Typically, these tumors develop in the third decade of life, except for adult granulosa-cell tumors which tend to be found at older ages. Materials and method. This paper presents the case of a 62-year-old woman with hyperplastic endometrial polyp and ovarian stromal tumor of the fibrothecoma type, together with a literature review on the diagnosis and therapeutic approach of the ovarian sex cord-stromal tumors. Results. A 62-year-old woman presented for metrorrhagia with onset three months prior to the gynecological consult. The clinical and ultrasound examination found endometrium thickness of 0.9 cm and left ovarian pseudo-cystic mass measuring 7/6 cm, with heterogeneous content and regular outline. The patient underwent magnetic resonance imaging following which the suspicion of an adenocarcinoma or a fibrothecoma was raised. The serum tumor markers were within normal limits, except for inhibin B which was highly increased. The endometrial biopsy revealed the presence of a hyperplastic endometrial polyp. Following clinical and paraclinical investigation, the patient underwent total hysterectomy with bilateral adnexectomy. Both extemporaneous and final pathological examination revealed a fibrothecoma. Sex cord-stromal tumors of the ovary are frequently associated with an excess of estrogen that can lead to the appearance of endometrial hyperplasia or endometrial cancer. Conclusions. Sex cord-stromal tumors often shows atypical clinical syndromes and are associated with a favorable clinical course, as they are low grade neoplasms compared to epithelial ovarian cancers. Sex cord-stromal tumors should always be part of the differential diagnosis of the ovarian tumors, even in the case of postmenopausal patients.

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**Keywords:** fibrothecoma, sex cord-stromal tumors, inhibin B, pseudo-cyst mass, ovary, differential diagnosis, surgery

#### Controversies in the surgical approach to leiomyoma during pregnancy

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Uterine leiomyomas affect 0.3-12.5% of pregnant women, but they usually remain asymptomatic during pregnancy. About 10-40% of these patients develop complications, depending on the size, location and the relation of the myoma to the placenta. Submucous retroplacental myomas larger than 200 cm3 and multiple fibroids represent important risk factors for pregnancy and for fetus development. The treatment is primarily conservative, but in cases of failure, surgery is the only alternative, although such interventions are associated with high risks of high blood loss, hysterectomy, spontaneous abortion, chorioamnionitis, or intrauterine fetal death. The indications for surgery include recurrent or persistent significant pain, large or rapidly growing myomas, large myomas located in the lower uterine segment or deforming the placental location. We present a case of a primigesta woman with large symptomatic myomas. Due to the failure of conservative management, we performed a myomectomy of giant myomas, at 17 weeks of gestation, with the preservation of the pregnancy. The technique and difficulties of the intervention are presented and discussed in relation with the literature findings.

**Keywords:** leiomyoma, pregnancy, pregnancy surgery, myomectomy, prenatal diagnosis, uterine conditions, ultrasound

#### Anatomical landmarks in the excision of parametrial endometriosis

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Introduction. The parametrium, which includes blood vessels, the ureter and the inferior hypogastric plexus, runs from the lateral cervix and vagina to the lateral pelvic wall in the frontal plane. The illness' severe endometriosis sometimes requires invasive surgery. Data show that comprehensive laparoscopic excision is the most effective endometriosis treatment, especially for those with severe or debilitating symptoms. **Aim.** The objective of this study is to emphasize the significance of anatomical markers used in the excision of parametrial endometriosis. Materials and **method.** Our laparoscopic or robotic parametrectomy results will be presented in the article. In our research, 374 patients with deep infiltrating endometriosis (DIE) who underwent laparoscopic or robotic surgery were evaluated. **Results.** A total of 181 patients (48.39%) were diagnosed with DIE stage IV by ASRM classification. Fifty percent of the patients (187) presented nodules of DIE at the level of the left parameter and 192 (51.33%) had nodules at the level of the right parameter. Thus, in over 46% of cases, the deep endometriosis nodule at the level of the right parameter was 3 or more than 3 cm (B3), and in the case of the left parameter, 47% of the cases were classified by ENZIAN as B3. Because deep infiltrating endometriosis involves parametrial tissues, we start with the physiological anatomy of the parametrium to check the integrity of the nerves close to deep infiltrating endometriosis nodules, during and after their surgical removal. One percent of the patients who required parametrectomy (two patients) showed damage to the hypogastric nerves. The anatomical landmarks are directly related to the size and extension of parametrial endometriosis. Conclusions. Parametrial endometriosis indicates increased endometriosis expression, requiring a more aggressive surgical technique. Thus, parametrectomy greatly affects the endometriosis surgery postoperative complications.

**Keywords:** deep infiltrating endometriosis, parametrial resection, anatomical landmarks

## Cervical elastosonography during pregnancy: challenges and controversies in studying preterm birth

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Elastosonography is a noninvasive method used to evaluate the mechanical properties of the tissue. The uterine cervix is responsible for maintaining pregnancy until term. Throughout pregnancy, the mechanical properties of the cervix change over time and may result in preterm birth, post-term birth, and cervical dystocia. Premature birth has many socioeconomic and psychological consequences, and the measurement of the cervix at 18-22 weeks of gestation is considered a predictor of premature birth. The stiffness of the cervix can be assessed by manual examination, which is a subjective method. An objective examination of the cervix is highly needed to identify patients at risk of premature birth; therefore, nowadays, elastosonography can be this method. The most important parameter is the stiffness of the internal os, which is a strong predictor of preterm delivery. There are two principles of cervical elastosonography: strain elastosonography and shear wave elastosonography. The manual force applied onto the probe in strain elastosonography depends on cervical stiffness - there is no standard to specify how much pressure is needed. The results of elastosonography measurements also depend on the phase of compression (application of pressure or relaxation), the equipment used, and the size of the region of interest (ROI). ROI is defined by the investigator, but it is considered by some authors to be the internal os. The shear wave method produces more objective results. There are a variety of scales used to evaluate the cervix. The advantages are the simplicity and the fact that the results can be obtained at the time of examination. The disadvantage is that it is hard to distinguish which part of the cervix belongs to the internal os. The challenges include the irrespective use of equipment, elastosonography methods, measurement, and scoring strategies. Although elastosonography seems to be a highly diagnostic option, there is no consensus for an optimal method for assessing the uterine cervix.

**Keywords:** elastosonography, pregnancy, preterm birth

#### Choice of tocolytic therapy: types, advantages and disadvantages

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The rate of preterm birth can vary between countries, ranging from 4% to 16%. Preterm birth is one of the leading causes of neonatal morbidity and mortality. Preterm birth can be challenging, because the causes of preterm birth are complex and not always well understood. This is a truly global issue, with a wide range of therapies available to help and improve the quality of care for pregnant women and infants born prematurely. Tocolytic agents are now widely used, and their function is to help delay the labor process itself. Prolonging pregnancy for at least 48 hours is an important goal in achieving the time required for the fetal lung maturation effect. Like any medical intervention, tocolysis has both advantages and disadvantages. On the other hand, it is important to note that tocolysis can increase fetal exposure to infections and acute complications. However, in women with suspected preterm labor, tocolysis can reduce the risk of neurological impairment and neonatal death. According

to a meta-analysis, atosiban is as effective as betamimetics in prolonging pregnancy and neonatal development, with adverse effects below 1%. Evidence for the use of magnesium sulphate or nitric oxide donors as tocolytics is weak. While indomethacin is generally well tolerated, it can cause a number of side effects. If the pregnant woman requires tocolytic therapy, ritodrinum does not appear to be the medication of first choice. Alternatives such as atosiban or nifedipinum appear to have comparable efficacy in terms of delaying delivery by a few days and fewer maternal adverse effects. In conclusion, while tocolysis may offer some benefits in the management of preterm labor, it also carries significant risks. It is essential that healthcare providers carefully weigh these advantages and disadvantages when considering tocolysis as a treatment option.

**Keywords:** preterm birth, tocolytic, therapy, complications

#### Posterior fossa malformations – a practical guide for diagnosis and counseling

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**Objective.** To review the ultrasound diagnosis criteria of several fetal posterior fossa malformations, along with novelties on adequate counselling regarding the postnatal outcome of affected infants. Methodology. Abnormal collections of fluid of the fetal posterior fossa have been assessed using transventricular and transcerebellar ultrasound views. Criteria for ultrasound diagnosis have been reviewed; additionally, ultrasound volumes and MRI images have been considered. Correlations with embryology and developmental pathophysiology have been evaluated for differential diagnosis. Results. Depending on the type of cystic malformation, in certain circumstances, ultrasound diagnosis was difficult to establish only on a transabdominal approach. Mid-trimester anomaly scan was the key point in the assessment of posterior fossa malformations. Using additional MRI images, more information on the anatomy of the fetal posterior fossa was obtained and the differential diagnosis has been facilitated. The position of the choroid plexus was a significant criterion for differential diagnosis. Early second-trimester diagnosis at 16-17 weeks of gestation is essential for the confirmation of malformations suspected at the end of the first trimester. **Conclusions.** The differential diagnosis between abnormal collections of fluid in the posterior fossa requires additional ultrasound mid-sagittal views and it is best made early in the second trimester. Defining a prognosis is impossible in certain cases, but vermis lobulation correlates with infant outcome. Cystic posterior fossa malformations have better outcomes compared to non-cystic anomalies.

**Keywords:** cerebellum, malformations, posterior fossa, Arnold Chiari, Blake pouch cyst

#### HSIL at screening cytology - what to do?

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Cervical cancer is one of the most common malignant tumors affecting the female genital tract worldwide. Human papillomavirus (HPV) is the major etiological agent involved in the pathogenesis of cervical dysplasia and cervical cancer. Babeş-Papanicolau cytology is an exfoliative cytology by which cells from the superficial layers of the epithelium are detached, displayed on a glass slide, and stained. The Current American Congress of Obstetricians and Gynecologists (ACOG) recommendations for cervical carcinoma screening in women depend on age, HIV infection/immunodeficiency, and pregnancy status. The screening should be initiated at the age of 21 years old. Women between 21 and 29 years old should be screened by cytology every three years. Women between 30 and 65 years old should be screened with cytology and HPV co-testing every five years, or by cytology alone every three years. The risk of high-grade squamous intraepithelial lesions (HSIL) in a patient with a positive HPV test and an abnormal Pap smear is approximately 20%, and it increases to 33% if HPV positive at more than one visit. **Conclusions.** Educating patients about the risk factors for HPV exposure, as well as safe sex practices can reduce the risk of HPV infection. Vaccines have been developed against high-risk HPV types 16 and 18, as well as low-risk HPV types 6 and 11. Because most high-grade lesions are associated with HPV16, vaccination is predicted to reduce the incidence of HSIL/CIN2/CIN3 by up to 87%.

Keywords: HSIL, cervical cancer, cytology

#### Pregnancy after epithelial ovarian cancer

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**Background.** The treatment in young patients with epithelial ovarian cancer (EOC) brings about the issue of fertility preservation. The quality of life is significantly decreased, as the standard treatment includes hysterectomy with bilateral adnexectomy, with or without systemic treatment. The systematic review of the literature indicates that fertility-sparing treatment in patients with EOC should be reserved for those with stage IA disease. **Case report.** We present the case of a patient with stage IC2 endometrioid adenocarcinoma of the ovary treated with fertility-sparing surgery (FSS), who become pregnant and delivered a healthy baby. The evolution of the case suggests a less aggressive disease, allowing the comment on whether the FIGO definition for stage IC2 should clearly mention the presence of invasive tumor, and not merely the presence of tumor. **Conclusions.** The clinical importance for discrimination between the presence and the absence of invasive tumor on the ovarian surface requires further investigation. If deemed important, recognizing the absence of invasive tumor on the ovarian surface remains to be established, as the absence of invasive tumor on the ovary surface might help attributing more cases to the stages less than IC EOC, increasing the number of conservative procedures.

**Keywords:** ovarian cancer, fertility-sparing surgery, FIGO classification of ovarian cancer

#### Malignancy in patients with endometriosis – synchronous or metachronous?

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The research on endometriosis, defined as the presence of endometrial-like tissue outside the uterus, and on its potential association with various malignancies, such as ovarian, breast and endometrial cancers, has been increasing during the past years. Recent studies have also delved into exploring the intriguing relationship between endometriosis and mesothelial pathology. Mesothelial pathology encompasses a spectrum of conditions affecting the mesothelial lining, ranging from reactive changes to the development of malignant mesothelioma. However, the precise nature of this association - whether synchronous (simultaneous) or metachronous (sequential) - remains an area of ongoing research. There are several hypotheses suggesting potential pathways, including chronic inflammation, hormonal imbalances and genetic predispositions, contributing to the development of both endometriosis and certain malignancies. Observational studies have reported instances of both synchronous and metachronous malignancies in individuals diagnosed with endometriosis, suggesting a possible bidirectional relationship. Ovarian cancer, in particular, exhibits a strong association with endometriosis, with some evidence suggesting endometriosis as a precursor lesion. While there is emerging evidence suggesting a potential link between endometriosis and mesothelial pathology, understanding the temporal relationship - whether the conditions occur concurrently or subsequently - remains a subject of active research and debate. Understanding the underlying biological mechanisms and the shared pathways between endometriosis and associated malignant pathology could offer insights into their relationship, improve diagnostic strategies, targeted therapies, and enhance prognostic outcomes for the affected individuals.

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**Keywords:** endometriosis, malignancy, ovarian, mesothelial

#### Current trends in the treatment of extrauterine pregnancy

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Ectopic pregnancy is a type of condition with a major impact on a woman's reproductive health, resulting from a combination of medical and social risk factors. The peculiarity of this pathology is that it can affect both the immediate vital prognosis and the functional prognosis, being the main cause of mortality at the beginning of pregnancy. The location of the ectopic pregnancy can dictate the clinical symptoms, the treatment and prognosis of the patients, some locations being susceptible to major complications with vital impact. The therapeutic behavior depends on the particularity of each case, the location, and the gestational age of the pregnancy. The new trends are moving towards a less invasive approach for the subsequent preservation of the fertile potential, but the limit between risk and benefit is sometimes difficult to determine. We present the case of a patient with multiple episodes of bilateral tubal ectopic pregnancy treated conservatively, in which, although the desire was to preserve fertility, the reproductive function was abolished. Is conservative therapy the new trend for such a medical condition, or has laparoscopy become the remedy for ectopic pregnancy? Our case aims to answer every question by integrating the anamnestic and imaging resources with literature, in order to preserve fertility.

Keywords: ectopic pregnancy, conservative, fertility

#### Challenges in treating vulvovaginal atrophy

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Vulvovaginal atrophy (VVA) is described as a chronic and progressive condition, related and induced by the hypoestrogenism status following menopause onset. Either physiological occurred or as a consequence of various surgical and medical treatments, the local atrophy may present differently, from mild to severe, depending on the type of onset, patient's characteristics and underlying cancer treatment, if present. Genitourinary syndrome of menopause (GSM), which replaced the term vulvovaginal atrophy, is more accurate and properly describes the implications, with anatomical and functional alterations, that extend beyond the inferior genital tract. Vulvovaginal atrophy is often underdiagnosed and underestimated, often moderate or severe, and the consequences are of great importance, eventually leading to a poor quality of like of the affected patients, especially when young women are involved. It benefits nowadays of several local and systemic therapies, from moisturizers and lubricants, systemic and/or local hormonal medication, such as estrogen and dehydroepiandrosterone, to innovative procedures, such as laser procedures and vaginal rejuvenation. The treatment should restore the objective alterations and satisfy the subjective complains of the patients. Despite the variety of options, we should take into consideration the contraindications, the reduced compliance, and the lack of effectiveness of most common and available therapies. Challenges are encountered particularly when cancer treatment is involved, in young women, and when post-cancer treatment, such as breast cancer, contraindicates hormonal therapy, known to be the most effective in treating VVA or GSM. Also, given the progressive characteristics of the condition that require a continuous treatment, as well as the personal medical history of each patient which may have induced the condition, often there is a challenge in finding the best effective, long-term and risk-free options individualized for each patient.

**Keywords:** vulvovaginal atrophy, menopause, breast cancer, cancer treatment, dehydroepiandrosterone, estrogen

#### What is the best approach to ultrasound risk assessment of adnexal mass in 2023?

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**Introduction.** Adnexal masses are a common problem in gynecology. In developed countries, the incidence of ovarian cancer is higher and represents the gynecological tumor with the greatest mortality rate. Accurate discrimination between benign and malignant adnexal masses is the essential starting point for an optimal management. The goal of an early diagnosis is to reduce unnecessary surgical procedures and minimize unfavorable ovarian cancer outcomes. Along time, there has been many classification systems that aim the standardization of adnexal masses. **Objective.** This study aimed to assess the effectiveness of the ADNEX model in women presenting with adnexal tumors. **Methodology.** In women who presented adnexal tumors and were scheduled for surgery at the "Sf. Pantelimon" Emergency Clinical Hospital, Bucharest, starting from March 2023 until now, the ADNEX model was used to assess the risk of ovarian cancer preoperative. **Results.** The ADNEX model indicated malignancy risk in 50% of borderline tumors and in 50% of malignant tumors, with 100% sensibility and 50% specificity. **Conclusions.** The ADNEX model provides a valuable predictive value for preoperative ovarian tumor malignancy.

Keywords: adnexal mass, ultrasound, risk

#### Controversies in using ultrasound in labor

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Introduction. Intrapartum ultrasound can be utilized to monitor labor progress and predict the likelihood of either a successful vaginal delivery or a higher probability of a caesarean delivery. Its usage has increased in recent years, but obstetricians still exhibit a high reluctance to incorporate it into their daily practice. Materials and method. We conducted a prospective, longitudinal, observational study at the Obstetrics and Gynecology Clinic of the "Sf. Pantelimon" Clinical Emergency Hospital, Bucharest, Romania, over a six-month interval. We evaluated the similarity between clinical and ultrasound evaluations, we assessed the reproducibility and accuracy of ultrasound examination during labor, and we conducted an analysis of the literature related to the diagnosis of labor dystocia and the evaluation of cervical dilatation through intrapartum ultrasound. This analysis aimed to identify the pros and cons and the utility of this investigation for these specific indications. Results. A total of 173 pregnant women who delivered in our clinic were included in the study. The concordance between clinical and ultrasound evaluations was 45% for head station, 52% for head position, and 59% for cervical dilatation. The highest accuracy in ultrasound examination for determining head station was achieved when various parameters were combined. The ongoing debates regard the frequency of ultrasound evaluations during labor, the timing of the initial scan, and the most effective parameters to use. In case of cervical dilatation evaluation through transperineal ultrasound in labor, many studies indicate a high level of acceptability among laboring women due to reduced discomfort compared to repeated clinical examinations. Conclusions. By combining various ultrasound parameters, the accuracy of labor dystocia diagnosis could be enhanced, enabling earlier intervention. Additionally, cervical dilatation can reliably be evaluated using transperineal ultrasound at smaller dilatation and with intact membranes.

Keywords: ultrasound, labor, controversies

#### Endometrial stromal sarcoma: a difficult diagnosis. Case report

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Stromal endometrial tumors account for less than 10% of uterine sarcomas and for approximately 1% of all malignant uterine tumors. The classification of these tumors has changed several times over the years and, therefore, interpreting studies on them is a real challenge. Currently, pathological, molecular, genetic characteristics, as well as treatment recommendations are based on the WHO 2014 classification system. They are divided into slow-growing tumors (LG-ESS) and fastgrowing tumors (HG-ESS). The histology exhibits heterogeneous morphological features that make immunohistochemistry difficult to interpret. Clinically, they are characterized by metrorrhagia that usually occurs in perimenopause. The biopsy can identify an endometrial carcinoma or hyperplasia, but it has no susceptibility for sarcoma. Ultrasound gives nonspecific aspects, as does magnetic resonance imaging. PET with CT would be a technique that could distinguish between the benign or malignant character of the tumor, but there are few studies in this direction. The diagnosis is made histologically, on the hysterectomy sample. The treatment consists of extrafascial hysterectomy without lymphadenectomy. The adjuvant therapy has a controversial role. Endocrine therapy is done in advanced stages with megestrol acetate or medroxyprogesterone. The prognosis in LG-ESS tumors is good, while in HG-ESS tumors, the survival is only a few years, regardless of stage. In conclusion, endometrial stromal sarcomas are rare malignant uterine tumors in which we may encounter diagnostic difficulties, and the treatment must be individualized.

**Keywords:** endometrial sarcoma, stromal uterine tumors, diagnosis of uterine sarcomas

#### Cervical cancer screening – how can we raise compliance?

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Cervical cancer remains one of the biggest health issues in Romania due to low rates of both screening and vaccination. From a patients' point of view, the main reasons for the low screening rates are: the patients' belief that screening procedures are invasive and produce physical discomfort, low medical education, religion and culture, lack of time, inconvenient clinic hours, and lack of transportations. In order to raise the screening rates, there is a need to change either the women's views on cervical testing, or to find alternate methods of screening. One possibility is represented by using urinary HPV testing, as it seems to be a good enough method of screening, with higher chances of patient's compliance.

**Keywords:** HPV, cervical screening, cervical cancer, urinary testing

#### Isthmocele – an iatrogenic pathology?

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Introduction. Isthmocele, or uterine niche, is a myometrial defect of the anterior wall of the uterine isthmus, where the scar of the previous caesarean section was formed. Because of the rising incidence of births by caesarean section, a proportional increase of patients with isthmocele was observed. The most common risk factors involved are those regarding the surgical technique - the location of the scar, the unequal thickness of the margins of the suture or the type of suture, as well as the factors regarding the patient -, the number of caesarean sections, and the presence of retroverted uterus. **Objective.** The objective of this study was to evaluate the types of suture and their association with the development of a niche. Materials and method. This paper represents the analysis of data obtained after evaluating 51 patients, six weeks after caesarean section performed in "Sf. Pantelimon" Emergency Clinical Hospital, Bucharest, in 2022-2023. The studied parameters were the age of the patient, the number of previous births by caesarean section, the type of suture, and the position of the uterus. **Results.** Among the 51 patients, 22 of them developed an isthmocele, while seven presented with a defect >50% than the total thickness of the myometrium. The deepest niches were observed in patients with retroverted uterus. Secondary, the type of suture associated with most cases of isthmocele was the locked suture, while the unlocked or interrupted suture was associated with less frequent development of a niche. Regarding the number of layers, using one-layered locked suture was associated with the deepest niches, compared to one-layered unlocked suture. The most common types were the triangular and semicircular ones. **Conclusions.** Judging by the increasing number of caesarean sections, further studies are needed to establish the type of suture that minimizes the risk of developing an isthmocele.

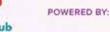
Keywords: isthmocele, uterine niche, iatrogenic

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#### Implications of congenital pneumonia in neonatal mortality

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Pneumonia is an inflammatory pulmonary process that may originate in the lung or may be a focal complication of a contiguous or systemic inflammatory process. In newborns, lower respiratory tract infections can be classified as congenital or neonatal in origin, and they are defined according to when the infection or pathogen has been acquired. Congenital pneumonias are usually part of a transplacental infection, while neonatal pneumonias can evolve following an intrapartum or postpartum acquisition. Compared to other childhood ages, the neonatal period has the highest risk of death from pneumonia. At least one-third of the 10.8 million annual deaths in children worldwide occur in the first 28 days of life, a substantial proportion of which are due to pneumonia. Although congenital pneumonia is an important cause of morbidity and mortality in newborns, it remains a pathology difficult to identify and treat promptly. The clinical signs are often nonspecific, and the radiographic and laboratory findings have a limited predictive value. The therapy in infants with congenital pneumonia is multifaceted and includes both antimicrobial therapy and respiratory support. The authors aim to review the current knowledge on etiopathogenic factors and diagnostic criteria in congenital pneumonia and to discuss future directions in the prevention and treatment of the disease and their impact on morbidity and mortality. **Conclusions.** The impact of neonatal pneumonia is significant, and the etiology is complex when compared to the pneumonias in older children. The goals of therapy are to ensure the survival and the well-being of the infant.

**Keywords:** congenital pneumonia, newborn infant, neonatal mortality

#### The association between bradycardia and apnea in term newborns – case series

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Bradycardia and apnea represent one of the most common complications in the neonatal population with gestation ages below 37 weeks. Studies done so far support the association between prematurity and the two clinical events. However, concerning the population of newborns, in our series of cases, we have been able to observe the presence of bradycardia and apnea. In the literature, the issue related to term newborns who present these clinical manifestations is very little debated. Our goals are to identify the risk factors for the appearance of symptoms in the term newborn and to demonstrate the existence of possible correlations between term newborns, bradycardia and apnea.

Keywords: term newborn, bradycardia, apnea

#### Cerebral ventricular dilatation – medium term prognosis. Case series

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Cerebral ventricular dilatation in newborns is one of the complications encountered both posthemorrhagic and postinfectious, its pathophysiology being complex and based on both obstructive processes, loss of cerebral parenchyma and cerebrospinal fluid (CSF) overproduction or deficient CSF resorption. In the following, we present five cases of newborns in which cerebral ventricular dilatation with different etiology was detected: two postnatal posthemorrhagic dilatation cases, a case of prenatal posthemorrhagic dilatation, a case of postinfectious dilatation with *T. gondii*, and a case of dilatation due to obstruction caused by a brainstem tumor.

**Keywords:** cerebral ventricular dilatation, posthemorrhagic, postinfectious, postnatal, prenatal

# The role of inflammation in the development and progression of retinopathy of prematurity – retrospective and prospective analysis

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Prematurity comes with a burden of complications, leading to high morbidity and mortality among these infants. The association between sustained inflammation and several complications has aroused scientific interest. One of the most common pathologies in preterm infants is retinopathy of prematurity (ROP), a major cause of blindness among these infants. We conducted three studies to determine the association between ROP and inflammation - one retrospective and two prospective. The retrospective study aimed to determine the association between inflammatory markers and ROP development in extremely premature and very premature neonates and to identify potential inflammatory biomarkers for ROP risk prediction. The relationship between different perinatal characteristics was studied - i.e., gender, gestational age (GA), birth weight (BW), C-reactive protein (CRP) and lactate dehydrogenase (LDH) concentrations; ventilation, continuous positive airway pressure (CPAP) and surfactant administration; and the incidence of stage 1-3 ROP. The results indicated that all were significant risk factors for ROP, but only birth weight and ventilation were significantly correlated with ROP and the specific stages of the disease. One prospective study aimed to evaluate the association between inflammatory markers and ROP development in extremely premature and very premature neonates and to identify potential inflammatory biomarkers for ROP risk prediction. The study included 48 neonates, 12 extremely premature infants (EPI), and 36 very premature infants (VPI). The EPI group had significantly higher mean interleukin 6 and lactate dehydrogenase levels at birth than the VPI group, while the VPI group had significantly higher levels of C-reactive protein at three days of life. Elevated CRP and interleukin 6 were significantly associated with a high risk of developing ROP stage 2 or above, emphasizing their potential as biomarkers for ROP risk prediction. The second prospective study had as its primary objective to establish the degree of inflammation in VPIs and EPIs in association with the histology findings of the umbilical cord (UC), while the secondary objective was to study the inflammatory markers in the neonates' blood as predictors of fetal inflammatory response (FIR). The results show that the proportions of infants with pathologically increased inflammatory markers did not differ between the EPIs and VPIs, as the stage of inflammation in the UC did not vary significantly between the EPIs and VPIs. In conclusion, it is imperative that additional research be conducted to verify the efficacy of potential inflammatory biomarkers for ROP risk prediction. This research is essential for enhancing early diagnosis and the management of this condition.

**Keywords:** prematurity, retinopathy of prematurity, inflammatory markers, inflammation

#### Ventilator-associated pneumonia in neonatal intensive care units

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Intubated and mechanically ventilated neonates are at risk of developing ventilator-associated pneumonia (VAP). Ventilator-associated pneumonia is defined as a nosocomial infection diagnosed in neonates mechanically ventilated for at least 48 hours. **Objectives.** The authors want to evaluate the incidence, the associated risk factors, the etiology, treatment and prognosis of VAP in the neonatal intensive care unit. Ventilatorassociated pneumonia can have an endogenous source of colonization of the nasopharynx, gastric fluid or tracheal secretions. The exogenous source is represented by noncompliance with the hygiene conditions in suctioning the secretions and handling the ventilator circuits. The hematogenous route is a rare cause of VAP. The diagnosis of an episode of VAP requires a combination of radiological, clinical and laboratory criteria. Antibiotic therapy is initiated with empiric broad-spectrum antibiotics, followed by switching to specific antimicrobial therapy. **Conclusions.** Ventilator-associated pneumonia increases the morbidity and mortality in the neonatal period. VAP is mainly associated with prolonged mechanical ventilation, chronic lung disease, and also with prematurity and low birth weight. It is also associated with an increased length of hospitalization and, therefore, with an increase in hospital costs.

Keywords: ventilator-associated pneumonia, newborn

#### Perinatal risk factors' role in the development of necrotizing enterocolitis

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**Background.** Perinatal inflammation usually starts before birth and will continue as sustained inflammation after birth. This inflammatory process will have role in the pathogenesis of different complications at preterm neonates. Most often are involved the bronchopulmonary dysplasia (BPD), the necrotizing enterocolitis (NEC), and the periventricular leukomalacia (PVL). The development of this pathologies is linked to the low gestational age, but also to maternal inflammatory process. The aim of this study was to followup the role of maternal and early neonatal inflammation in NEC's development. Materials and method. We performed a prospective longitudinal study in the Neonatology Department of the First Obstetrics Clinic, Cluj-Napoca. We enrolled 74 preterm newborns in the study group, admitted between May 2022 and December 2022, with gestational ages below 34 weeks + 6 days. Interleukin 3 (IL-3) and matrix metalloproteinase-9 were measured by ELISA technique from

blood sample obtained at birth. Also, we followed the values of C-reactive protein (CRP) and the procalcitonin values in the first days of life. Maternal inflammation and chorioamnionitis role on NEC incidence were analyzed. We studied the correlation of the inflammatory markers with NEC incidence in the study group. **Results.** Twenty neonates of the study group developed necrotizing enterocolitis. The IL-3 value at birth was higher in neonates who developed NEC. A positive correlation between maternal CRP value and the IL-3 of neonates was found (r=0.541, p<0.001). The mothers from the NEC group had higher CRP values than the mothers of non-NEC patients. **Conclusions.** A higher incidence of necrotizing enterocolitis was found in neonates with inflammation. Maternal inflammation will increase the risk of inflammatory process in preterm neonates and the risk of necrotizing enterocolitis.

**Keywords:** preterm birth, inflammation, necrotizing enterocolitis

#### Updates and perspectives in the monitoring and treatment of neonatal jaundice

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Although most newborns have a transient increase in serum bilirubin, only about 1.1 million children develop severe hyperbilirubinemia. In low-income countries, kernicterus and acute bilirubin encephalopathy have a seven-fold higher morbidity and mortality rate than in those with a high development index, and 83% of these newborns develop neurological sequelae. Considering that jaundice can only be a symptom of a large panel of diseases with onset in the neonatal period, the newborn's clinical condition indicates the urgency of investigations and treatment. According to the American Academy of Pediatrics, serum or transcutaneous bilirubin should be determined in all newborns during hospitalization, but this is not possible in some low-income countries. The first system for the noninvasive determination of neonatal bilirubin was the icterometer, which comes in several forms: the two-color bilirubinometer and a color card, with eight shades of yellow. While in low-income countries the bilirubinometer is still used, in the rest of the world technology has already advanced towards mobile applications for the diagnosis of jaundice, based either on the characteristics of the skin, or of the eye. Currently, the role of these devices is to identify those newborns who require the determination of serum bilirubin, which remains the gold standard. In addition to the careful monitoring of newborns during hospitalization and at home, guidelines adapted according to the country of origin are necessary for the effective control of hyperbilirubinemia. These should reduce the unnecessary exposure to phototherapy and identify neonates at risk of neurotoxicity associated with hyperbilirubinemia. In addition to conservative treatment, the focus should also be on the preventive framework of neonatal jaundice: early feeding in the delivery room, systematic evaluation of all newborns before discharge, as well as establishing the need for follow-up of bilirubin values according to the assessed risk.

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**Keywords:** jaundice, guidelines, newborn, skin color analysis

#### Congenital limb malformations: an interdisciplinary approach

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Congenital limb malformations represent a relatively frequent neonatal pathology, and in most cases they are benign. In this presentation, we will explore the spectrum of these limb anomalies. We will discuss the treatment plans, as well as any interdisciplinary consults necessary for these infants. These malformations have numerous causes, from genetic syndromes affecting multiple organ systems, sporadic idiopathic malformations of benign nature, to abnormalities produced by teratogenic agents. No matter the clinical manifestations, these newborns must be examined for associated disorders. McKusick-Kaufman syndrome, sirenomelia, as well as phocomelia are just but a few of the diseases associating limb malformations. These disorders can lead to unfavorable developments, permanent disabilities, as well as fatal outcomes.

**Keywords:** malformations, limbs, congenital, extremities, syndrome, phocomelia, sirenomelia, thalidomide, teratogenesis, syndactyly, polydactyly

# The importance of serial CRP measurements in the management of newborns admitted in one secondary level neonatal care academic center: a descriptive study of 210 cases

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**Background.** C-reactive protein (CRP) is used to evaluate and monitor the newborns in health or in disease state during their admittance in neonatal care units worldwide. An early-onset infection is one of the most serious complications during first few days of life. While confirming the diagnosis by microbiological exams typically takes more than 48 hours, the serum level of CRP is used as a rapid test to guide the management. **Objective.** To determine the role of serial CRP in the management of term and preterm newborns during the first 72 hours of age. **Methodology.** From 1 January to 31 December 2022, all of the patients who were suspected of congenital infections and who had a blood culture taken at less than 72 hours of age and verified by serially CRP were retrospectively enrolled in our study. For all of the included patients, at least two CRP determinations were done during the first 72 hours of life. All CRP levels and the newborns age at blood drown were recorded. CRP values were analyzed based on gestational age groups (term versus preterm) and newborns age. **Results.** During the study period, a total of 210 newborns (32 preterm and 178 terms) were evaluated. The mean gestational age (GA) was  $38.8 (\pm 0.1)$  weeks, and the mean birth weight (BW) was  $3170 (\pm 350)$  grams, ranging from 1880 to 4660grams. The mean value of the first CRP (mg/L) was  $9.4 (\pm 0.3)$  at 24 hours of age, dropped at  $3.1 (\pm 0.3)$  after 24 hours, and the median values were higher among term infants compared to preterm infants. **Conclusions.** In asymptomatic term and preterm newborns, CRP levels may not mitigate for the risk of infections in the absence of infants' clinical condition.

**Keywords:** newborns, early-onset sepsis, C-reactive protein, serial measurements

# Correlations between the head ultrasound performed at term-equivalent age in the premature neonates and the general movements neurologic examination

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**Objective.** To investigate the existing correlations between two modalities of estimating the outcome of the premature neonates: the head ultrasound performed at term-equivalent age, and the General Movements (GM) neurologic examination. Materials and method. Between February and August 2023, 44 premature neonates (with gestational ages between 30 and 36 weeks) were examined at term-equivalent age in the follow-up program. There were noted the results of the GM examination (normal movement pattern [N] writhing movements; poor repertoire pattern [PR] and cramp-synchronized pattern [CS]). Also, the General Movement Optimality Score (GMOS) was performed. The ultrasound examination was performed after the clinical exam and the measurements were performed after the examinations (blinded to the result of GM). There were noted: the Levine Index, the diagonals of the frontal horns of the lateral ventricle, the mid-body distance of the lateral ventricles, the diagonal of the head of the caudate nucleus, the diameter of the basal ganglia, the sinocortical width, the interhemispheric fissure, the length and the width of the callosal body, the diameters of the cerebellum, the anteroposterior diameter of the pons, the cortical depth, and the degree of maturation of the cortex. Each of these measurements was correlated with the results of the GM examination in order to find the statistically significant associations. Results. The GM evaluation identified 12 patients with cramp-synchronized pattern (CS), 12 patients with poor repertoire pattern (PR), and 20 patients with normal movement pattern (N). The patients with CS pattern presented with statistically significant differences compared to the patients with PR and N pattern in the case of: Levine Index (CS/PR/N 10.82 mm/9.46 mm/10.08 mm, p<0.01), the diagonals of the frontal horns of the lateral ventricles (CS/PR/N 11.47 mm/10.15 mm/10.40 mm, p<0.05; CS/PR/N 4.87 mm/3.3 mm/3.81 mm, p<0.02), and the ventricular mid-body distance (CS/PR/N 5.11 mm/3.42 mm/3.63 mm, p<0.001). There were also noted statistically significant differences concerning the diameters of the basal ganglia (CS/PR/N 14.25 mm, 15.36 mm, 15.24 mm). In the subset of patients with GA between 30 and 32 weeks (17 patients), there were noted statistically significant differences only in the case of the diagonals of the frontal horns (CS/PR/N 11.19 mm/9.92 mm/9.57 mm, p<0.05; CS/PR/N 5.18 mm/2.63 mm, 3.57 mm, p<0.02) and ventricular mid-body distance (CS/PR/N 5.28 mm/3.58 mm/3.43 mm, p<0.001). In case of the patients with PR movement pattern, there were noticed a significantly enlarged subarachnoid space - sinocortical width (CS/PR/N 2.34 mm/3.16 mm/1.91 mm, p<0.01) and a significantly lower diameter of the pons (CS/PR/N 16.93 mm/15.27 mm/16.78 mm, p<0.002). **Conclusions.** The cramp-synchronized GM pattern was significantly associated with measurements that show the dilatation of the lateral ventricles, used to quantify the degree of involvement of the white matter and with a significantly lower diameter of the basal ganglia. This could be correlated with the prognostic significance of both the CS movement pattern and the white matter (motor pathways) and basal ganglia lesions for cerebral palsy. The ultrasound abnormalities observed in patients with PR movement patterns do not have a clear explanation at this moment, but they could be associated with later occurring pathology (cognitive or language problems).

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**Keywords:** general movements examination, ultrasound at term-equivalent age, correlations, premature infants

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