Young Investigator Evening

7:00 p.m.-10:00 p.m. Young Investigator Evening

Chair: Priv. Doz. Phillip Reif (A), ....(l),....(S),...(H),...(C)

YI-1, Rüdiger Hochstätter: Diagnostic of MAP, case report. (A)
Department of Obstetrics and Gynaecology, Medical University of Graz

Introduction:

The term morbidly adherent placenta (MAP), also called placenta accreta spectrum (PAS), includes placenta accreta, increta and percreta. With the increasing prevalence of caesarean sections in recent decades, there is a distinct rise in MAP. The most important risk factor for development of an MAP is a placenta praevia after a previous c-section.

Case report:

A 31-year-old GV/PII, with a history of 2 c-sections, presented to the department of obstetrics in the 24+0 WG with a placenta praevia totalis, with a suspected diagnosis of a placenta percreta. In the 32+3 WG the patient was admitted to our department and she received 2 corticosteroid injections (Betamethasone 12mg) given 24 hours apart. The elective c-section was performed in the 35+0 WG. A MAP was confirmed and subsequently a hysterectomy and salpingectomy on both sides were performed. The patient was dismissed in good condition on the 7th day post-partum.

Conclusion:

Because of the high risk of life-threatening haemorrhage at delivery in women with MAP, it is essential to appreciate the risk factors and to attempt a prenatal diagnosis.
YI-2, Vesna Sokol Karadjole: LMH therapy in pregnant women with hereditary thrombophilia and recurrent spontaneous abortion. (C)

Sokol Karadjole V¹, Ivanišević M¹,², Đelmiš J²

¹University Clinic for Women's Diseases and Delivery, University Clinical Hospital Centre Zagreb, Croatia, ²School of Medicine, University of Zagreb, Zagreb, Croatia

INTRODUCTION:

The main goal of this research was to investigate the perinatal outcome in hereditary thrombophilic patients with recurrent missed abortions after treatment with low molecular weight heparin.

MATERIALS AND METHODS:

The research covered three groups of women: the first group (LMWH+) included 133 pregnant women with the history of two or more early miscarriages and hereditary thrombophilia who were treated with a prophylactic dose of LMWH, the second group (LMWH-) enrolled 35 women with same criteria who were not treated with a LMWH and the third (control) group covered 55 healthy pregnant women with hereditary thrombophilia who were not treated with a LMWH.

RESULTS:

Pregnant women with inherited thrombophilia and habitual abortions who were treated with prophylactic doses of LMWH heparin showed a statistically significant reduction in miscarriages compared to women with who were not administered LMWH (P= 0,001).

CONCLUSION:

LMWH has a role in preventing further pregnancy losses in patients with hereditary thrombophilias and recurrent miscarriages.

YI-3 Lea Bombač (S) Early recurrent miscarriage associated with massive perivillous fibrin deposition: a case report.

Early miscarriage, defined as an intrauterine embryo or fetus without fetal heart activity within the first 12 6/7 weeks of gestation, happens in approximately 10 % of all clinically recognised pregnancies. The incidence of miscarriage increases with age; the probability of having a miscarriage is about 20% for women aged 35 and 40% for 40 years. Recurrent miscarriage has been inconsistently defined. When defined as 3 consecutive pregnancy losses prior to 20 weeks from the last menstrual period, it affects approximately 1% to 2% of women. Diagnosis of massive perivillous fibrin deposits (MPVFD) indicates an excessive accumulation of fibrin around the chorionic villi and causes obliteration of the intervillous space and consequently an
atrophy of the villi. The result is a hindered exchange of gases and nutrients between the mother and the fetus, which can lead to intrauterine growth restriction, premature birth or even intrauterine death. MPVFD is a rare pathology of the placenta, characterised by a high rate of recurrence, with a recurrence probability of up to 80 percent in subsequent pregnancies. A definitive diagnosis of MPVFD is made by a pathologist based on a macroscopic evaluation of the specimen sent for pathohistological examination and microscopic images of histological slices. Therefore, referral of products of conception to histopathological examination is crucial for the diagnosis of MPVFD as one of the possible causes of recurrent early pregnancy loss. Thrombophilia, autoimmune disease, rejection reactions, infections, etc. are among the risk factors for MPVFD. Prevention of early recurrent miscarriages can only be successful if appropriate interdisciplinary treatment and good management of the patient coexist.

A case report of a patient with over 20 early miscarriages is presented. MPVFD was diagnosed in the only adequate sample of pregnancy residues sent for examination to the Pathology Laboratory of Gynecological Clinic, University Medical Centre Ljubljana. The paper also presents pathogenesis, possible etiology, clinical presentation and attempts to prevent MPVFD. It is the first such case of a patient with such a high number of miscarriages in the presence of MPVFD and the unsuccessful outcome of pregnancy up to date.

**YI-4 Ábel T Altorjay: Evaluation of placental vascularization indices in monochorionic diamniotic and dichorionic diamniotic twin pregnancies. (H)**

Ábel T Altorjay¹, Tibor Nyári², Gábor Németh¹, Andrea Surányi¹

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We aimed to investigate and compare placental vascularization between monochorionic diamniotic (MCDA), dichorionic diamniotic (DCDA) normal twin pregnancies, and normal singular (S) gestations.

Placental 3-dimensional power Doppler indices, such as vascularization index (VI), flow index (FI), and vascularization-flow index (VFI) were measured in MCDA (N=15) and DCDA (N=36) normal twin pregnancies, and in S (N=109) normal pregnancies.

In our results VI, FI, VFI, and birth weight was significantly \( p<0.01 \) higher in normal S gestations compared to twin pregnancies. VI, FI, VFI, and birth weight was significantly \( p<0.01 \) higher in DCDA normal twins compared to MCDA normal twins. We found good correlation between placental vascularization indices and birth weight within the two twin groups.
3DPD placental vascularization indices measured with VOCAL software seems an appropriate tool for comparison of placental vascularization between normal MCDA and DCDA twin pregnancies.

**YI-5, Matea Vukusic Mijacika: Psychological support to parents after miscarriage or child loss in birth. (C)**

*M. Vukušić Mijačika: University Hospital Centre Zagreb, Department of Gynaecology and Obstetrics*

Child loss is at the top of the list as one the most stressful events in a person’s life. Loss of pregnancy often isn't considered a real loss and, consequently, affected parents are not provided with social support. Commonly, in addition to grief, parents are dealing with anger, intense feelings of guilt, helplessness, lack of control and meaning in their lives. During a period of three years following pregnancy loss women are at increased risk of developing anxiety and depressive disorders, especially if there had been a prior loss of this kind. The role of psychologist in giving support to the mother, as well as to other family members, will be presented here in brief. In addition to support given by the psychologist and close friends, recovery can be further significantly facilitated if support is provided by the physician and other medical staff immediately after the unfortunate event. Further on, the psychological basis of most common parents’ reactions to loss will be explained. Also, guidelines regarding desirable and undesirable ways of dealing with grieving parents will be provided.

**YI-6, Julia Reisinger: Mental well-being after artificial abortion, comparison of two procedures. (A)**

Access to safe abortion and subsequent care are critical to women's self-determination, physical and mental health and mental well-being. In Austria it is legal since 1975 to carry out an abortion within a fixed period. In addition to the surgical procedure, there is the possibility to perform a termination of pregnancy with medication since 1999. However, abortion can be associated with the risk of psychological problems such as anxiety, depression or substance abuse. Women who consider pregnancy to be particularly meaningful and those who have little or no support, as well as women who are unsure of their decision or are under pressure to perform abortion, are particularly vulnerable to post-abortion stress reactions. If there are no risk factors, women are satisfied with the drug induced abortion in most cases. The study raises the quality of life of women after drug induced and surgical abortion.
YI-7, Mugerli S.: Analysis of vascular endothelial glycocalyx in patients with severe preeclampsia (S)

Authors: Sara Mugerli, Daša Zupančič, Rok Romih, Miha Lučovnik

BACKGROUND

Several clinical characteristics of severe preeclampsia, namely generalized edema and organ failure resemble those of sepsis. According to recent studies there are changes in vascular endothelial glycocalyx in patients with sepsis that take part in increased vascular permeability. Animal studies have shown thinning of endothelial glycocalyx in experimental sepsis. Constituents of glycocalyx have been increased in serums of critically ill patients as well as in serums of preeclamptic patients. None of the studies have described morphologic changes of endothelial glycocalyx in severe preeclampsia. The aim of our study is to define these morphological changes.

MATERIALS AND METHODS

We plan to include 15 patients with severe preeclampsia with a cesarean section. During the cesarean section we will take biopsies of omentum, placenta and umbilical chord. There will be two control groups: 15 healthy pregnant women at term with an elective cesarean for an obstetric indication and 15 women in their reproductive age who will undergo laparoscopy for benign pathology. We will examine those samples with light and electron microscopy.

RESULTS

We have so far included 10 patients with severe preeclampsia, 16 pregnant controls and 15 non-pregnant women. We have tested different protocols for glycocalyx fixation and visualisation on electron microscopy. We have developed a protocol for glycocalyx preservation using diluted heparin and rutenium red. Steady flow of fixative was achieved using a perfusor.

CONCLUSIONS

We expect to obtain important information on maternal and fetal glycocalyx in severe preeclampsia. Our results could help develop new diagnostic and therapeutic measures in preeclamptic patients.
YI-8, Ivana Paljk Likar: Cerclage outcomes after uterine and cervical surgery - a cohort study (S)

Paljk Likar Ivana 1, Blickstein Isaac 2, Manca Bregar 3, Andreja Trojner Bregar 1,4

1 Department of Perinatology, Division of Obstetrics and Gynecology, University Medical Centre, Ljubljana, Slovenia
2 Department of Obstetrics and Gynecology, Kaplan Medical Center, Rehovot, affiliated with the Hadassah-Hebrew University school of Medicine, Jerusalem, Israel,
3 University of Rijeka, Faculty of medicine, Croatia
4 University of Ljubljana, Faculty of medicine, Slovenia

Objective:

To compare outcomes in cases of cerclage after uterine and cervical surgery in singleton pregnancies.

Methods:

We analyzed data from Slovenian National Perinatal Information System (NPIS) in the period between 2013 and 2017. We identified patients who underwent cerclage after uterine and cervical surgery and compared their outcomes to the rest of the patients who underwent cerclage for other reasons.

Results:

The odds of having a baby born at ≥37 weeks of gestation and with ≥ 2500g birthweight were lower for the women with cerclage after uterine and cervical surgery (OR 0.3, 95% CI (0.1, 0.8) and OR 0.4, 95% CI (0.2-0.9)), compared to other cases of cerclage.

Conclusion:

A history of uterine and cervical surgery increases the risk of preterm birth and low birth weight despite elective cerclage suture.

YI-9, Kaltrina Kutlovci Hasani: Does Nicotine Reduce the risk of Pre-eclampsia? A Prospective Study (A)

The relationship between risk of preeclampsia and smoking in high risk group for development of preeclampsia will be investigated. Biochemical and biophysical markers for cardiovascular changes during pregnancy will be analyzed. Furthermore, maternal hair cortisol concentration as biomarker of chronic stress in pregnancy and maternal hair nicotine concentration as marker of Tabaco exposure will be examined.
All pregnant women with high risk of preeclampsia in 1st trimester will be divided in three groups: Group A: pregnant women who used to smoke before becoming pregnant but do not smoke during pregnancy; Group B: Women who continue smoking or use nicotine patches during pregnancy; Group C: Women, who did not smoke before or during pregnancy.

For biophysical analysis, pulse wave velocity, augmentation index, flow mediated dilatation, retinal microvascular changes, intima media thickness, hemodynamic changes (heart rate, heart rate variabilities over 24 hours, 24-hour blood pressure) will be performed. For the biochemical analysis, serum concentrations of Soluble Fms-like thyrosinkinase-1 (sFlt-1), Placental growth factor (PIGF) and coagulation parameters will be measured. Hair nicotine concentration and hair cortisol level will be measured from hair samples of participants.

All measurements will be processed between 11th and 14th week of gestation before beginning with acetylsalicylic acid administration for prevention of preeclampsia, at 24th week of gestation, after 37th week of gestation, 3 day after delivery and six months after delivery.

**YI-10, Katja Ražem: Comparisson of cardiotocography and near-infrared-spectroscopy for assessment of fetal oxygenation during labor. (S)**

**Introduction:**

Cardiotocography (CTG) is the most commonly used tool in obstetrics, despite having been shown to have poor specificity for detecting fetal hypoxia and acidosis. Most commonly used classifications for CTG analysis worldwide are those of FIGO, ACOG, RCOG and 5-tier classification system by Parer and Ikeda, which differ in terms of nomenclature and categorization of traces. Near-infrared spectroscopy (NIRS) enables non-invasive, real-time assessment of tissue oxygenation. It has previously been studied as a method for assessing placental oxygenation in pregnancy and fetal cerebral oxygenation during labour. The objective of our study was to determine which CTG classification system best predicts neonatal acidosis at birth and which individual CTG and NIRS parameters are best predictors for neonatal acidosis.

**Methods:**

We included 50 healthy women in active stage of labour at term with anterior/fundal placental positions. Exclusion criteria were: suspected IUGR, oligo or polyhydramnios, diabetes mellitus (preexisting or gestational) requiring insulin treatment, preeclampsia and depth of subcutaneous tissue measured by ultrasound > 5 cm. We performed continuous CTG and NIRS monitoring of patients from admission to the end of second stage of labour. At delivery, blood was sampled from the umbilical artery for acid-base analysis – this was chosen as pre-specified neonatal outcome. In CTG traces, the number and types different types of decelerations were analyzed and variability of each CTG recording assessed. In
addition, CTG tracings as a whole were assessed according to most commonly used CTG classification systems. NIRS recordings were analyzed by studying episodes of placental deoxygenation. We used the decrease of $\geq 5\%$ from baseline placental oxygenation of duration $\geq 15\text{–}180\text{ seconds}$ to determine events of placental deoxygenation. The velocity of tissue deoxygenation was also assessed.

**Results:**

Information on 43 women was available for final analysis. Ten (23 \%) neonates were born with umbilical artery pH $\leq 7.20$. The change of sensitivity and specificity of CTG classification systems in predicting neonatal acidosis was graphically represented with a receiver-operating-characteristics (ROC) curve. All CTG classification systems achieved low diagnostic reliability in predicting neonatal acidosis (AUC NICE 0.57, Parer&Ikeda 0.55, FIGO 0.54 and ACOG 0.53), however, the results were not shown to be statistically significant. Compared to the group with pH $> 7.20$, fetal acidosis was statistically significantly associated with more episodes of placental NIRS deoxygenation (9 (range 2–37) vs. 2 (range 0–65); $p<0.001$), higher velocity of placental NIRS deoxygenation (2.31 (range 0–22) vs. 1 (range 0–49) \%/s; $p = 0.03$), more overall number of decelerations on CTG (25 (range 3–91) vs. 10 (range 10–60); $p = 0.02$), and more prolonged decelerations on CTG (2 (range 0–4) vs. 1 (range 0–3); 0.04). ROC curves were used to estimate the predictive value of CTG and NIRS parameters for neonatal pH $\leq 7.20$. Number of placental deoxygenations had the highest prognostic value for fetal/neonatal acidosis (AUC 0.85, (95 \% CI 0.70–0.99).

**Discussion:**

The aim of our study was to assess which commonly used CTG classification system is best in predicting neonatal acidosis and to assess the applicability of non-invasive NIRS of the placenta for fetal surveillance during labour. Results show, that all CTG classification systems analyzed fall into the low diagnostic reliability category. Placental deoxygenations during labour measured by NIRS were shown to be associated with fetal/neonatal acidosis (AUC 0.85, 95 \% CI 0.70–0.99). Predictive value of placental NIRS for neonatal acidosis was superior to that of CTG, which is currently the gold standard for assessing fetal acid-base status during labour.

**YI-11, YI-11 Sindicic Dessardo (C)**

Chronical morbidity and quality of life among newborns $\leq 32$ weeks gestation.

**YI-12 Kerstin Stiedl (A) Maternal and Fetal Outcomes in Gestational Diabetes. A Retrospective Analysis of Different Management Options.**

**Background:** Gestational diabetes (GDM) is one of the most common complications of pregnancy and has, especially when left untreated, negative short- and long-term
effects on mother and child. The management depends on the severity of glucose intolerance and includes lifestyle-modification as well as drug therapy. Insulin represents the standard medical treatment, but because of reassuring study results metformin, an oral anti-diabetic drug, was introduced as an alternative medication. The aim of the study was to evaluate pregnancy outcomes comparing different management procedures.

Methods: This retrospective analysis was conducted from January 2016 until March 2018 at the obstetric department of the Medical University of Graz, Austria. All patients who suffered from gestational diabetes and fulfilled predefined inclusion criteria were included (n = 418). Depending on their treatment protocol 3 study cohorts were established, i.e. lifestyle-modification-group, insulin- and metformin groups. Fetal birth weight was defined as main outcome parameter. As secondary outcome measures further maternal and fetal parameters as gestational age, preterm birth, fetal macrosomia, fetal growth restriction, mode of delivery, severe maternal morbidity among others were analysed. Data were collected from databases “openMedocs” and “PIA” and processed with Microsoft excel and SPSS 25.0.

Results: There was no significant difference between groups regarding the fetal birth weight as our primary outcome parameter (mean 3366 ± 444g), Tab.1. The mean blood glucose (MBG) before therapy showed a significant difference between all three groups (p<0.001), with lowest in the lifestyle-group and highest in the insulin-group. MBG before delivery was similar in all groups (97), Tab.2. Women in the lifestyle-modification-group had a significant lower BMI (p<0.001) than the patients in the other groups, Tab.3. Median gestational age at delivery was 40 weeks GA in all three study groups. Concerning pregnancy associated hypertensive disorders, there were no significant differences between either. There were further statistically significant results regarding maternal characteristics; i.e. history of GDM in a previous pregnancy (p=0.001), positive family history about diabetes (p=0.001), delivery of a newborn >4000g before (p=0.009) and previous C-sections (p=0.005).

Conclusion: In our study cohort maternal and neonatal outcomes were similar in all three groups regarding the most relevant pregnancy outcome measures. These data demonstrate that the treatment procedures (i.e. life-style-modification vs. insulin- or metformin therapy) are applied adequately. Though the study design did not comprise the comparison with a healthy study cohort, pregnancy outcomes are very satisfying. Furthermore, these results confirm preexisting data that metformin appears as a reasonable alternative to insulin. Besides, we could not find any evidence for negative effects of metformin on women and their babies. Certainly, there are more studies needed, especially to figure out the long-term effects of GDM and its different treatment options on mother and child.
4th October

Topic 1: New diagnostic approaches in perinatal medicine

8.00 a.m.-8.40 a.m. Introductory lectures and Invited lectures

IL-1, Marina Ivanisevic: Novel diagnostic approaches in perinatology.

C-PEPTIDE CONCENTRATION IN PREGNANT WOMEN WITH TYPE 1 DIABETES MELLITUS AND PREVALENCE OF SEVERE HYPOGLYCEMIA

Marina Ivanišević, Josip Djelmiš, Mislav Herman, Marina Horvatiček, Josip Juras

University Clinical Hospital Centre Zagreb, Croatia, 2School of Medicine, University of Zagreb, Zagreb, Croatia

The effort to reach the ideal glycemic control in type 1 diabetic pregnancy (T1DM) is often linked with increased risk of hypoglycemia. The aim of the study was to find the effect of C-peptide concentration on severe hypoglycemia prevalence in diabetic pregnancy and its impact on insulin doses and fetal macrosomia.

Study participants. 90 women with T1DM and singleton pregnancy, who received insulin treatment for ≥ 24 months, were included in the study. The HbA1c was ≤8% at pregnancy confirmation. The study was conducted in Department of Obstetrics and Gynecology, School of Medicine University of Zagreb, as a part of scientific project PRE-HYPO No IP-2018-01-1284. Participants were divided into three groups according to duration of diabetes: 1. group 2 -10 years (n=36); 2. group 11 -20 years (n=36), and 3. group ≥ 20 years (n=18). Severe hypoglycemia was defined as glucose concentration below 3 mmol / L.

Results. The percentage of severe hypoglycemia in the first trimester according the groups was 41.7%, 66.7% and 77.8%, respectively, and it declined in third trimester in all three groups (19.4%; 38.9% and 66.7%, respectively). The C-peptide concentration in group 1 was significantly higher throughout pregnancy when compared with group 2 and 3 (P =0.011; p =0.015; P <0.001). The negative correlation (Spearman) was found between C-peptide concentration and both bolus and basal insulin dose (rs = -0.402, P = 0.012; rs = - 0.412; P = 0.012 respectively).
The negative correlation was between HbA1c and C-peptide concentration ($rs = -0.765; P = 0.001$). There was significant correlation between HbA1c and neonatal weight ($r = 0.358; P= 0.001$).

**Conclusion.** Higher C-peptide concentration was found in pregnant patients with shorter duration of diabetes. Lower prevalence of hypoglycemia and lower bolus-basal doses were required in T1DM women who had pregnancy mediated increased endogenous insulin secretion.

**IL-2, Zita Gyurkovits: New diagnostic approaches in perinatal medicine – neonatal aspects. (H)**

*Zita Gyurkovits¹, Judit Bakki¹, János Sikovanyecz¹, Márta Katona², Gábor Németh¹, Hajnalka Orvos¹*

¹University of Szeged, Department of Obstetrics and Gynaecology, Hungary

²University of Szeged, Department of Paediatrics, Hungary

Scientists have already written about the care of premature newborns in the seventeenth century; however special care in hospitals started only 300 years later. The first neonatal intensive care units appeared in 1920’s; in Hungary in 1975; special care methods began to be developed in the late nineteenth century.

In the last few decades many innovative advances helped in substituting old methods of therapy with the aim of improving patients’ care, survival and quality of life, especially in the field of Neonatology.

While previously there was a big emphasis on using equipments and there was little concern on the involvement of the family, this began to change by encouraging family involvement and having individualized plans for each neonate.

In this lecture our aim was to demonstrate this huge progress in neonatal medicine and to examine the benefits of these new technological advances using literature database.
8.45 a.m. -10.00 a.m. Obstetric invited lectures

Chair: Marina Ivanisevic, Yoram Jacob Meir

**OIL-1, Eva Kampelmühler: Placenta in Preeclampsia. Morphology and consequences. (A)**

_Eva F. Kampelmühler, Gerit Moser_

_Department of Pathology, Medical University of Graz_

Preeclampsia (PE) and pregnancy induced maternal hypertension are complicating about 3-5% of pregnancies.

PE not only causes considerable maternal morbidity but also induces fetal risk. Prematurity, fetal growth retardation and increased perinatal mortality are direct consequences of poor placental function.

To date, there is still no satisfying model of preeclampsia origin. We will present current research hypothesis of preeclampsia development.

Placental vascular disorders are caused by malperfusion in the maternal vessels. These disorders of intervillous circulation result in fetal hypoxia. This impairment is counterbalanced at its best by the placenta, adapting in size and with accelerated maturation.

Continuous disorders of maternal perfusion such as repeated placental infarcts or hemorrhage are increasingly restricting placental function and finally result in gradual or sudden placental insufficiency.

Examination of placental morphology can give an insight into the alterations during pregnancy and give information about the development and amount of maternal placental dysfunction.

Fetal outcome can be predicted by placental morphology and fetal death explained.

**OIL-2, Josip Djelmiš: Impact of free fatty acids on fetal development and growth. (C)**
**OIL-3 János Sikovanyecz: Vasculogenic factors in the etiology of increased nuchal translucency (NT) thickness. (H)**

**János Sikovanyecz¹, Tamás Bitó¹, Hajnalka Orvos¹, Gyurkovits Zita¹, Márta Katona², Gábor Németh¹**

Vasculogenic factors in the etiology of increased nuchal translucency (NT) thickness.

Introduction: NT is used in prenatal screening, however, the pathophysiology of increased NT is insufficiently understood. In our previous results NT thickness inversely correlates with fetomaternal transfusion (FMT) after chorionic villus sampling (CVS). We supposed that vasculogenic factors may play ethiologic role in this correlation.

Materials and methods: NT measurement followed by CVS for genetic reasons were performed in 149 pregnant women. FMT was calculated from the change in maternal serum alpha-fetoprotein (AFP) level. The concentration of vasculogenic factors were determined from the aspirated chorionic tissue.

Results: No correlation was found between NT and Vascular Endothelia Growth Factor. NT inversely correlated with basic-Fibroblast Growth Factor, and positively with endothelial Nitric Oxide Synthase (p<0.04).

Discussion: Vasculogenic factors may play aethiologic role in NT thickness. Further studies are necessary to explore the exact pathophysiology of NT.

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**OIL-4 Elisa Rizzante: The added value of umbilical vein blood flow volume (Umb-Q) in fetal growth restriction. (I)**

**T. Stampalija¹, ², *E. Rizzante¹, C. Ottaviani¹, L. Lo Bello², M. Barbieri¹, I. Fantasia², M. Quadrifiglio²**

¹ Department of Medical, Surgical and Health Science, University of Trieste;

² Unit of Fetal Medicine and Prenatal Diagnosis, Institute for maternal and child health IRCCS Burlo Garofolo.

**Objectives:**

To evaluate the added value of Umb-Q in differentiating between small for gestational age (SGA) and fetal growth restriction (FGR).
Methods:

This is a case-control study (1:2) of fetuses with abdominal circumference (AC)<10° or reduced growth velocity (AC crossing 50°). Controls were uncomplicated pregnancies with normal fetal growth. Doppler evaluation of materno-fetal districts was performed together with Umb-Q, both absolute and corrected for estimated fetal weight (EFW) value.

Results:

There were 106 cases and 178 controls. The figure represents: a) results of absolute Umb-Q, and b) Umb-Q corrected for EFW of cases with at least one abnormal Doppler parameter (orange dots n=41) and cases with all normal Doppler parameters (green dots n=65). Both groups presented asignificantly lower Umb-Q values (all p<0.05).

Conclusions:

Umb-Q might be helpful in identifying a subgroup of SGA fetuses with normal conventional Doppler indices that have however suffered from stunted fetal growth.

OIL-5 Faris Mujezinovic: Perinatal Screening with fetal cell-free DNA and ultrasound examination. Perinatal Screening with Fetal Cell-Free DNA And Ultrasound Examination - Our experience

Prof. Faris Mujezinovic, MD, PhD

Department of perinatology, University Clinical Centre Maribor, Maribor, Slovenia

Already during pregnancy most women want to know if their baby is healthy, especially genetically. Answer to this question can lead to serious consequences, so we need reliable prenatal tests.
For decades, gold standard for genetic examination of the unborn child were invasive tests such as amniocentesis (AC) and chorionic villus sampling (CVS). In eighties of last century one randomized controlled study showed that these tests are associated with increased risk of miscarriage, especially if done in earlier gestational age (for AC before 15 weeks of pregnancy and 11 weeks of pregnancy for CVS). That revelation encouraged numerous initiatives to find a way to reduce number of invasive test and exposure to increased risk for miscarriage and other complications associated with these procedures.

In nineties of last century publications that emphasized the role of ultrasound markers together with maternal blood markers as a screening tools, accelerated the need for national guidelines which would outline the indications for prenatal invasive test besides advanced age of a women.

In many countries these national policies were regulated by law. Advantage of this trend is, that the algorithms for decision when to perform the invasive tests were clear and uniformed across individual country. Even more importantly, national policies decided which tests are covered by insurance and under which circumstances, and which that not.

The disadvantages of national policies showed their selves with appearance of fetal cell-free fetal blood as a powerful tool for noninvasive detection of genetically affected fetus, especially Down syndrome. As these tests are largely independent from the age of the mother, problem appeared how to integrate these new technological advances in already existing protocols. Another challenge was that because of these new tests, many women choose not to follow national guidelines, which in their nature encourage larger number of invasive tests.

In my presentation I share our experience of implementing the fetal cell-free DNA in maternal blood at the Department of perinatology University Clinical Center Maribor, Slovenia and obstacles that we were faced with.
PIL-1 Bernhard Schwaberger: Upcoming additional non-invasive monitoring during neonatal transition immediately after birth. (A)

Schwaberger Bernhard1, Pichler Gerhard1, Baik-Schneditz Nariae1, Bruckner Marlies1, Mileder Lukas1, Binder-Heschl Corinna, Urlesberger Berndt1

1 Division of Neonatology, Department of Pediatrics, Medical University of Graz, Graz, Austria

Transition from fetus to newborn is a complex physiological process. Monitoring this process to recognize perturbations is crucial but remains challenging. Besides the clinical evaluation it is currently only recommended to monitor heart rate and arterial oxygen saturation by using pulse oximetry and/or electrocardiography in the delivery room. Additional monitoring may provide further information during immediate transition and potentially help to guide resuscitation.

Since the brain is the most vulnerable organ, non-invasive cerebral monitoring immediately after birth seems to be of particular interest. Probably the most promising technique is the near-infrared spectroscopy providing continuous monitoring of cerebral oxygenation and cerebral blood volume and is feasible even in very-low-birth-weight infants. Other modalities to monitor the brain include Doppler sonography and amplitude-integrated encephalogram, which both are technically challenging during immediate transition and therefore of limited value. Additional non-invasive monitoring of the cardiovascular system includes repetitive non-invasive measurements of arterial blood pressure and the evaluation of cardiac function either by functional echocardiography or by non-invasive cardiac output monitoring (electrical velocimetry).

Before any of these modalities can routinely be recommended during neonatal resuscitation, clinical trials are needed demonstrating the feasibility of such an approach and positive effects on clinical outcome parameters.

PIL-2 Kresimir Perkovic: Current perinatal diagnostic approaches for congenital muscle diseases. (C)
PIL-3 Márta Katona: The role of autonomic nervous system in the neonatal adaptation: heart rate variability examinations in term and preterm babies. (H)

Marta Katona, M.D.¹, Alexandra Olah, M.D¹, Hajnalka Orvos, M.D.², Zita Gyurkovits, M.D., Tamas Bito, M.D.² and Gabor Nemeth, M.D.²

Departments of Pediatrics¹, Obstetrics and Gynecology². University of Szeged, Hungary

Introduction:

Heart rate variability (HRV) is the function of the heart to accommodate to physical load with variation in the time interval between heartbeats. This neurovegetative function of the heart is controlled by parasympathetic and sympathetic nervous system. There is little information about the role of HRV in pediatric population, especially in neonates and prematures.

Aim of the study: to examine, how HRV changes in healthy, in sick term and preterm babies.

Methods:

HRV: time domain: SDNN, SDANN, MSSD, pNN50, frequency domain: HF, LF, VLF, LF/HF were measured by LabTech Holter ECG, ECG and Doppler-echocardiography.

Patients: 20 healthy, 10 babies with CHD, 15 prematures

Results:

HRV is decreased in preterms and sick terms: Parasympathetic tone is decreased (pNN50, LF/HF), sympathetic tone is increased (HF).

Conclusions:

Autonomic innervation of the heart depends on gestational age, influenced by maturation and other factors. HRV can be regarded as prognostic factor, an increase might reflects better outcome.

PIL-4 Bua J. Correlation between body composition at term equivalent age and later neurodevelopment in very low birth weight infants.

Bua J, Vallon F, Travan L, Brovedani P, Risso FM, Paviotti G.

INTRODUCTION: Very low birth weight (VLBW) preterm infants often encounter a postnatal growth failure and, when compared with their term counterparts, they show an altered body composition, with lower amounts of fat-free mass (FFM) and increased fat mass (FM) at term equivalent age (TEA). Emerging evidence suggests that the quality of growth plays a role on later neurodevelopment. Up to now few studies studied the correlation between body composition changes and later cognitive and motor outcomes. Greater FFM gains, but not FM
gains, during NICU hospitalization and early infancy up to 4 years are associated with improved motor and cognitive scores at 1 year-old. On the contrary, increasing adiposity during early childhood seems to be detrimental for long term cognitive outcomes, as it has been negatively associated with lower working memory performance in preterm infants.

**AIM OF THE STUDY:** to evaluate whether FM and FFM at TEA correlated with cognitive, motor and language Bayley scores measured at 2 years of corrected age.

**MATERIALS AND METHODS:** We enrolled 51 (28 males, 23 females) preterm babies born in our NICU at the Institute for Maternal and Child Health IRCCS “Burlo Garofolo”, Trieste, Italy, between January 2013 and August 2016. They were all ≤ 32 weeks of gestation with a birthweight of ≤1500 g and they all completed the Bayley Scales of Infant and Toddler Development (Third Edition) at 2 years of corrected age. Body composition was measured using air displacement plethysmography by the PeaPod Infant Body Composition System (COSMED, Ltd, Concord, California) at TEA. Correlations between FFM, FM and Bayley scores (cognitive, motor and language) were evaluated using linear regression.

**RESULTS:** In our population FM% (FM) at TEA did not correlate with Bayley scores (p>0.05). A positive correlation was found between FFM at TEA and language score (R2:0.09 ; p:0.04), but not between FFM and either composite motor or cognitive scores. The association between language score and FFM kept significant in a multiple regression analysis model including gender, birth weight, mechanical ventilation, maternal education. Both linear and weight growth measured between birth and TEA, and between TEA and 2 years did not correlate with Bayley scores.

**CONCLUSION:** Bayley language scores are associated with FFM at discharge, independently of birthweight, gender, maternal education and mechanical ventilation. On the other hand, body composition at TEA in our population does not correlate with Bayley cognitive and motor scores at 2 years.

Further studies are needed to explore the association of body composition and later neurodevelopment.

**PIL-5 Sara Boštjančič: A comparison between two biochemical markers of iron deficiency, hepcidin and ferritin, in very preterm infants: study design**

*Sara Boštjančič1, Ana Spirovska1, Vanja Erculj2, Lilijana Kornhauser Cerar1, Štefan Grosek1,3,4*

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**Abstract:**

Hepcidin is a liver-produced protein, directly involved in iron metabolism, and could thus be an useful biochemical marker of iron deficiency.
Our aim is to compare two biochemical markers of iron deficiency, hepcidin and ferritin. Our hypothesis is that in very preterm infants hepcidin is more sensitive and specific biochemical marker of iron deficiency compared to ferritin. Study is being conducted at the Neonatal Intensive Care Unit, Department of Perinatology, Division of Gynaecology and Obstetrics, University Medical Centre Ljubljana. We intend to include 40 newborns born between 24 to 31 weeks of gestation (from January to August 2019, 34 were already included). Hepcidin and ferritin levels are measured twice; the first blood sample is taken in the first weeks after birth, the second before discharge home. We expect to show that hepcidin is useful biochemical maker of iron deficiency.

12:00 a.m.-1:00 p.m. Pharma-Presentation: Roche Diagnostics, Perkin Elmer, Thermo Fisher Diagnostics. Biomarkers in Pregnancy

1:00 p.m.-2:00 p.m. Interdisciplinary Case Report Discussion

Chair: Bence Csapo, Mirta Starcevic

CR-O Karoline Mayer-Pickel: Prevention, diagnosis and management of early onset preeclampsia before fetal viability in women with antiphospholipid syndrome, obstetric case report (A)

Management in women with primary antiphospholipid syndrome and preeclampsia before fetal viability - a report of 7 cases and review of the literature

Karoline Mayer-Pickel, Christina Stern, Mila Cervar-Zivkovic, Wolfgang Schöll, Manfred G. Moertl and Uwe Lang

Department of Obstetrics, Medical University Graz, Graz, Austria

Introduction

Preeclampsia complicates about 10-17% of pregnancies with antiphospholipid syndrome (APS). It is often severe and might occur early in pregnancy, sometimes even before 24 weeks of gestation.

Patients and methods

We retrospectively reviewed the data of 7 women with primary APS who developed preeclampsia before 24 weeks of gestation. Plasma exchange had been performed
in four of the cases and two women received corticosteroids. One of the women had received 20 mg of pravastatin daily, starting at 18 weeks of gestation.

**Discussion**

This retrospective analysis revealed that women with APS can develop severe preeclampsia even before 20 weeks of gestation. Optimal management of preeclampsia before 24 weeks of gestation usually depends on weighing the maternal and fetal complications from expectant management with prolongation of pregnancy versus the predominant fetal and neonatal risks of extreme prematurity from “aggressive” management with immediate delivery.

**CR-P Kresimir Perkovic: Differential diagnosis of extreme polyhydramnios: a case of congenital myotonic dystrophy with symptomatic but non-diagnosed mother (C)**

*Perković K, Starčević M,*

*Department of Neonatology, Clinical Hospital Centre Zagreb, Croatia*

**Background:**

Congenital myotonic dystrophy (CDM) is the most severe form of myotonic dystrophy type 1, a rare condition caused by a triplet repeat expansion in the non-coding region of the myotonin gene (DMPK) at 19q13.3.

**Case presentation:**

Our patient is a second child of non-consanguineous parents born at 32 weeks gestation by an emergency cesarean section because of bleeding placenta praevia. Pregnancy course was complicated by extreme polyhydramnios (AFI 40) of unresolved etiology. Newborn required admission to the intensive care unit because of respiratory failure. Clinical course was complicated by extreme hypotonia, muscle weakness, swallowing difficulties, regurgitation and gastroparesis. Based on prenatal complications and postnatal clinical course CDM was suspected and confirmed by genetic testing. Myotonic dystrophy was diagnosed in the mother and brother too, with subsequently recognised clinical symptoms.

**Conclusion:**

CDM should be considered as a possible cause of extreme polyhydramnios.
FC-1 Gabrijela Bržan Šimenc: Optic ultrasound for monitoring of central nervous system in patients with severe preeclampsia. (S)

Brzan Simenc G1, Ambrozic J2, Lucovnik M1.

1 Department of Perinatology, Division of Obstetrics and Gynecology, University Medical Center Ljubljana, Slovenia

2 Department of Cardiology, University Medical Center Ljubljana, Slovenia.

BACKGROUND:
Optic ultrasonography with measuring optic nerve sheath diameter (ONSD) and optic disc height (ODH) is a method of monitoring intracranial hypertension.

OBJECTIVE:
To determine whether ONSD and ODH are greater in patients with severe preeclampsia than in healthy pregnant controls.

METHODS:
We included patients with severe preeclampsia and healthy pregnant women in this prospective observational study. Ocular sonography measurements of ONSD and ODH were performed before delivery, at one day and four days post-delivery.

RESULTS:
Thirty patients with severe preeclampsia and 30 healthy controls were included in the study. Optic nerve sheath diameter and ODH were significantly greater in patients with severe preeclampsia.

CONCLUSIONS:
Severe preeclampsia was associated with a significantly higher ONSD and increased ODH.

FC-2, Bence Csapo: Interdisciplinary approach in early pregnancy care: what has been changed? (A) - laut Programm sollte hier der Ben nicht sein….

FCS-2 Gerlies Treiber (A) New diagnostic approaches in management of diabetic pregnancies.
FCS-3 Lili Steblovnik (S) Changes in perinatal outcomes after implementation of IADPSG criteria for screening and diagnosis of gestational diabetes mellitus - National Survey.

FC-4 Karoline Mayer-Pickel: Angiogenic factors in pregnancies of women with antiphospholipid syndrome and systemic lupus erythematosus. (A)

Karoline Mayer-Pickel¹, Christina Stern¹, Katharina Eberhard², Uwe Lang¹, Barbara Obermayer-Pietsch³, and Mila Cervar-Zivkovic ¹

¹ Department of Obstetrics

² Computational Bioanalytics, Center for Medical Research, and ³ Division of Endocrinology and Diabetology, Department of Internal Medicine and Endocrinology Lab Platform; Medical University Graz, Graz, Austria

Objectives

An imbalance of angiogenic placental factors such as endoglin, soluble fms-like tyrosine kinase 1(sFlt-1) and placental growth factor (PIGF) has been implicated in the pathophysiology of preeclampsia. This study aimed to evaluate serum levels of sFlt-1, PIGF and endoglin in women with antiphospholipid Syndrome (APS) and systemic lupus erythematosus (SLE) through pregnancy.

Material and Methods

Serum levels of sFlt-1, PIGF and endoglin were measured prospectively in 17 women with primary APS (PAPS), 18 women with secondary APS (SAPS), and 23 women with SLE.

Results

35% of women with PAPS, 17% of women with SAPS, 9% of women with SLE developed preeclampsia. Women who developed preeclampsia had significantly higher mean sFlt-1 and endoglin levels, higher sFlt-1/PIGF ratios, and lower mean PIGF-levels than women who did not.

Discussion

Endoglin, sFlt-1 and PIGF are potential early screening parameters for the development of preeclampsia in pregnant women with APS and/or SLE.

FC-5, Evgenija Homsak: Laboratory diagnostic in preeclampsia. (S)
FC-6 Ioana Lakovschek: Styrian experience in management of late onset preeclampsia. (A)

Ioana-Claudia Lakovschek¹, Karoline Mayer-Pickel¹, Christina Stern¹, Barbara Obermayer-Pietsch², Uwe Lang¹, Mila Cervar-Zivkovic¹

¹Department of Obstetrics and Gynecology, Medical University of Graz, Austria
²Department of Internal Medicine, Div. of Endocrinology and Metabolism, Endocrinology Lab Platform, Medical University of Graz, Austria

Introduction:

Preeclampsia affects about 2-5% of all pregnancies and remains one of the major diseases leading to maternal and neonatal complications. In the literature, the cause of early onset preeclampsia is more likely to be placental associated, whereas late onset preeclampsia is more determined by the maternal cardiovascular and morbidity status. In late onset preeclampsia after 34th week of gestation fetal immaturity plays no longer a big role, although intrauterine fetal growth restriction and placental insufficiency are also common and can affect the fetus significantly. The maternal complications, however, range from minor to severe and even fatal.

Methods:

Evaluations of the birth data and standard management of the Department of Obstetrics, of the Medical University of Graz, on late onset preeclampsia with special consideration to the biomarker (sFlt-1/PlGF) and the maternal complications.

Results:

For the diagnosis of preeclampsia classical symptoms, blood pressure, urinary findings and laboratory values continue to remain the most important clues. We use the biomarker (sFlt-1/PlGF) as an additional tool to assess the patient’s disease (e.g. placental state) and to adjust possible disease course, even if in cases of late onset preeclampsia the biomarker level should be used with caution. Data from our collective will be shown. Even if the decision to induce labour or perform caesarean section after 34th week of gestation can be made easier with regard to the fetal maturity, maternal disease is in most cases not immediately cured and additional complications and severe morbidity can occur in the next hours or sometimes days.

Conclusion:

Several approaches like the prophylaxis with acetylsalicylic acid, screening for preeclampsia and diagnostic markers (sFlt-1/PlGF) have improved diagnostics and management, especially for early onset preeclampsia. Due to an increasing maternal age at first pregnancy, an increase of obesity, the new possibilities of artificial fertilisation the onset of preeclampsia is still rising and will continue to challenge us.
Nina Höller: Cerebral and peripheral muscle oxygenation: course during the first day after birth in preterm neonates. (A)

Nina Höller1,2, Nariae Baik-Schneditz1,2, Bernhard Schwabeger1,2, Lukas Mileder1,2, Berndt Urlesberger1,2, Gerhard Pichler1,2

1 Research Unit for Neonatal Micro- and Macrocirculation, Department of Pediatrics and Adolescent Medicine, Medical University of Graz, Graz, Austria
2 Division of Neonatology, Department of Pediatrics and Adolescent Medicine, Medical University of Graz, Graz, Austria

Aim:

To investigate the ratio of cerebral (cTOI) to peripheral muscle (pTOI) tissue oxygenation index measured by near-infrared spectroscopy (NIRS) in preterm neonates on the first day after birth.

Methods:

Preterm neonates, with simultaneous cTOI and pTOI measurements during 24 hours after birth, were included. Mean of NIRS and routine monitoring parameters were calculated for every hour and for the 24-hour measuring period. Courses of all parameters were analysed.

Results:

87 healthy preterm neonates (33.1 [32.1-34.1] weeks of gestation) were included. Mean TOI/pTOI-ratio over the 24 hours was 0.96±0.02, mean cTOI 70.1±1.4 and mean pTOI 73.4±0.9. Routine monitoring parameters were within normal ranges. cTOI/pTOI-ratio decreased significantly over time. cTOI and heart rate showed also a significant decrease over time. Blood pressure increased significantly. pTOI, arterial oxygen saturation and temperature showed no significant change.

Conclusion:

cTOI/pTOI-ratios in healthy preterm neonates showed a significant decrease over time.

Marlies Bruckner: Cerebral and peripheral tissue oxygenation and cardiac function in preterm neonates. (A)

Marlies Bruckner1,2, Corinna Binder-Heschl1,2, Bernhard Schwabeger1,2, Lukas Mileder1,2, Nariae Baik-Schneditz1,2, Alexander Avian3, Berndt Urlesberger1,2, Gerhard Pichler1,2

1 Research Unit for Neonatal Micro- and Macrocirculation, Department of Pediatrics and Adolescent Medicine, Medical University of Graz, Graz, Austria
Background:
Aim of the present study was to analyse possible associations of cardiac function and regional cerebral and peripheral-muscle tissue-oxygen-saturation (crSO2 and prSO2) and fractional-tissue- oxygen-extraction (cFTOE and pFTOE) on the first day after birth.

Methods:
Parameters of cardiac function (left ventricular ejection fraction (EF), the tricuspid annular plane systolic excursion (TAPSE) and superior vena cava (SVC) flow) were correlated to crSO2, prSO2, cFTOE and pFTOE at time of echocardiography.

Results:
47 preterm neonates (GA: 33.0±1.6 weeks, BW: 2000±476 grams) were included. crSO2 and prSO2 were 78±11% and 88±10%, cFTOE and pFTOE were 0.16±0.11 and 0.09±0.28, respectively. EF was 65±8%, TAPSE was 6±1mm and SVCflow was 77±30 ml/kg/min. CrSO2, prSO2, cFTOE and pFTOE did not correlate with EF, TAPSE and SVCflow.

Conclusion:
In the present study we found no correlation between the cerebral and peripheral tissue oxygen saturation and cardiac function in preterm infants on the first day after birth.

FC-9 Christina Wolfsberger: Peripheral muscle oxygenation measured with near-infrared spectroscopy in preterm neonates on the first day after birth

Christina Wolfsberger1,2, Nariae Baik-Schneditz1,2, Bernhard Schwabeger1,2, Corinna Binder-Heschl1,2, Nina Höller1,2, Lukas Mileder1,2, Berndt Urlesberger1,2, Gerhard Pichler1,2

Introduction:
The aim of the present study was to evaluate peripheral oxygenation and perfusion within the first 24 hours after birth in cardio-circulatory stable preterm neonates.

**Methods:**

Peripheral muscle near-infrared spectroscopy measurements combined with venous occlusion were performed in preterm neonates within the first day after birth. Total haemoglobin (HbT), oxygen delivery (DO2), oxygen consumption (VO2), fractional oxygen extraction (FOE), tissue oxygenation index (TOI) and mixed venous oxygenation (SvO2) were calculated for four 6-hour periods. The first period was compared to period two to four.

**Results:**

133 preterm neonates were included. HbT, DO2, SvO2 increased, FOE decreased and TOI showed a trend towards increase on the first day after birth, whereas VO2 did not change.

**Conclusion:**

On the first day after birth peripheral muscle oxygenation and perfusion change over time and behaviour is different when compared to already published changes observed later during weeks after birth.

**FC-10 Anja Čopi Jerman: A woman with pulmonary hypertension detected during late pregnancy (S)**


₁- University Medical Centre Ljubljana, Slovenia – Division of gynaecology and obstetrics, Department of perinatology

₂- University Medical Centre Ljubljana, Slovenia – Division of internal medicine. Department of pulmonology

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₅- University Medical Centre Ljubljana, Slovenia – Department of Anaesthesiology and Intensive Therapy
Introduction

Women with idiopathic pulmonary arterial hypertension (PAH) are not advised to get pregnant, due to high maternal as well as perinatal mortality and severe morbidity rates. Thus, abortion is advised when PAH is diagnosed during pregnancy. However, if diagnosed late in pregnancy there is increased risk of complications during and after abortion as well, especially if PAH is severe.

The patient

We describe a case of a 39-year-old otherwise healthy woman in her third pregnancy (one abortion in early pregnancy), who presented with dyspnoea and cyanosis at 24 weeks of gestation. She was diagnosed with severe idiopathic PAH, which was non-vasorecative. Risk of abortion in late pregnancy was high and the patient preference was to keep the pregnancy. Thus, decision was made to start with epoprostenol and supportive therapy for prevention of right heart failure. She was under careful monitoring in intensive care by the multidisciplinary team. Prompt abortion was planned only in the case of deterioration. Echocardiography was performed weekly and the patient went through the preparation for potential lung transplantation. PAH did not progress and the fetal growth was appropriate. At 30 6/7 weeks of gestation elective caesarean section was performed under general anaesthesia and precise cardiovascular monitoring. We delivered a healthy neonate. In mother occurred, as anticipated, transient deterioration of right heart failure and respiratory insufficiency without need for invasive ventilation. After intensification of supportive therapy and addition of sildenafil to epoprostenol her condition improved. Four weeks later both mother and neonate were dismissed from hospital. Three months after delivery mother was transferred from i.v. epoprostenol to s.c. treprostinil and macitentan was added. 1-year follow-up showed no consequences in child and mother is stable. However, PAH remained high and lung transplantation is planned in case of deterioration.

Conclusion

We report a case of severe PH diagnosed at 24 weeks of gestation. With epoprostenol treatment and careful multidisciplinary monitoring pregnancy could be prolonged until almost 32 weeks. Cesarean section was performed at that point with good neonatal outcome without progression of PAH or important deterioration of mother. Multidisciplinary collaboration was a key to optimal patient management.
Tamara Trunk, Lea Bombač, Vesna Fabjan

Autoimmune hepatitis is one of the rare causes that leads to liver cirrhosis and is more common in younger women. Organ transplantation is the main treatment for patients with end-stage liver failure. About one-tenth of women with liver transplant are in reproductive age. The number of pregnant women after liver transplantation is increasing. Fetal and maternal complications after liver transplantation, such as fetal growth restriction, preterm delivery, pregnancy diabetes, and maternal hypertensive disease are more common than in the general population. Treatment of patients with liver transplants also includes counseling on contraceptive use, scheduling optimal pregnancy time, and appropriate immunosuppressive treatment during pregnancy. Despite the usually good outcome of pregnancy, such pregnancy should be considered as high risk for both the mother and the fetus.

Our case illustrates an example of a patient who due to autoimmune hepatitis in childhood needed liver transplantation. Without appropriate immunosuppressive treatment an acute rejection of liver transplant developed a few years after the transplantation. Nevertheless the patient successfully became pregnant three times and gave birth with a good outcome for the fetus. Due to complications of liver disease, the patient consented to immunosuppressive treatment in the third pregnancy. This treatment is still not optimally regulated. This is the first such case in Slovenia.

Sara Hanuna: Non-invasive ventilation for RDS is a risk factor for retinopathy of prematurity: single centre study (S)

This single tertiary centre retrospective study comprised ELGAN-s (extremely low gestational age (GA) newborns, GA < 28 weeks) born during 2010/2011 and 2015/2016. In the second period, less invasive surfactant administration with non-invasive ventilation was the first choice of treatment for respiratory distress syndrome (RDS). We enrolled 248 ELGAN-s, M/F ratio 1.12, average GA 25.8 weeks and birth weight 807g. The odds of clinically significant ROP in the second period were 3.4-times greater and for clinically insignificant ROP 4.4-times greater than for the absence of ROP. However, in the second period, mortality decreased (9.4% vs 29%, p < 0.001). Controlling for known risk factors for ROP, there were 1.22-times (95% CI:1.01 – 1.48) greater odds of any ROP with every additional week of non-invasive ventilation (p = 0.03). The duration of non-invasive ventilatory support increased the risk of ROP, however, less invasive approach significantly increased survival. Special care needs to be taken with appropriate oxygenation during non-invasive ventilation.
BACKGROUND. Several clinical characteristics of severe preeclampsia, namely generalized edema and organ failure resemble those of sepsis. According to recent studies there are changes in vascular endothelial glycocalyx in patients with sepsis that take part in increased vascular permeability. Animal studies have shown thinning of endothelial glycocalyx in experimental sepsis. Constituents of glycocalyx have been increased in serums of critically ill patients as well as in serums of preeclamptic patients. None of the studies have described morphologic changes of endothelial glycocalyx in severe preeclampsia. The aim of our study is to define these morphological changes.

MATERIALS AND METHODS. We plan to include 15 patients with severe preeclampsia with a cesarean section. During the cesarean section we will take biopsies of omentum, placenta and umbilical chord. There will be two control groups: 15 healthy pregnant women at term with an elective cesarean for an obstetric indication and 15 women in their reproductive age who will undergo laparoscopy for benign pathology. We will examine those samples with light and electron microscopy.

RESULTS. We have so far included 10 patients with severe preeclampsia, 16 pregnant controls and 15 non-pregnant women. We have tested different protocols for glycocalyx fixation and visualisation on electron microscopy. We have developed a protocol for glycocalyx preservation using diluted heparin and ruthenium red. Steady flow of fixative was achieved using a perfusor.

CONCLUSIONS. We expect to obtain important information on maternal and fetal glycocalyx in severe preeclampsia. Our results could help develop new diagnostic and therapeutic measures in preeclamptic patients.
Ivana Paljk Likar, Tanja Premru Sršen

Department of Perinatology, Division of Obstetrics and Gynecology, University Medical Centre, Ljubljana, Slovenia

Medical Faculty, University Ljubljana, Ljubljana, Slovenia

Introduction:

IgA glomerulonephritis is the most common glomerulonephritis affecting women in childbearing age. It is linked to several obstetric adverse outcomes: preterm birth, intrauterine growth restriction, small for gestational age, low birth weight, pregnancy induced hypertension and preeclampsia.

Case:

A 29-year-old primipara with IgA glomerulonephritis, stage 2 chronic kidney disease, presented with stable proteinuria, haematuria, and chronic arterial hypertension treated with methyl-dopa. Ultrasound examinations showed normal fetal well-being and fetal growth. In the 32nd gestational week worsening of woman's kidney function, and destabilization of arterial pressure were observed. In the 37th gestational week, we induced labor for a headache and further worsening of kidney function but low sFlt-1/PlGF ratio. A healthy baby girl with a normal birth weight (3020g) was born vaginally.

Conclusion:

In patients with chronic kidney disease, the sFlt-1/PlGF ratio proved to be decisive in distinguishing between a worsening of the disease and preeclampsia, preventing unnecessary provider-initiated preterm delivery due to false suspicion.
5th October

Topic 2: Biopsychosocial aspects of pregnancy

8.00 a.m.-8.40 a.m. Introductory lectures and Invited lectures

Chair: Pierpaolo Brovedani, Christina Stern

IL-1 Vislava Globevnik Velikonja: Multimodal screening for biopsychosocial high-risk pregnant women. (S)

University Medical Centre Ljubljana

Mental disorders in pregnancy are common, with known incidences of individual disorders; however, due to comorbidity we cannot simply add them up. Experts estimate that at least 15% of pregnant women meet the clinical criteria for at least one of the disorders. Unrecognized and untreated disorders have adverse effects on the pregnant woman and fetus, so efficient screening is crucial, alongside a timely and professional assistance within the healthcare system. Between 2017 and 2019, Slovenia introduced a multimodal screening for depression, anxiety, violence and drug, tobacco and alcohol addiction in the perinatal period. It involves every trimester and first post-partum visit screening. Gynecologic teams have been trained during one-day workshops to perform screening and were provided with appropriate materials, and a manual and guidelines for the management of recognized biopsychosocial high-risk pregnant women. Simultaneously, a psychologists/psychiatrists network was set up and educated to adequately assist women in the perinatal period.

IL-2 Stefano Bembich: Biopsychosocial aspects in neonatology (I)

Stefano Bembich, Pierpaolo Brovedani

Division of Neonatology, IRCCS Burlo Garofolo, Trieste, Italy

In defining health, the World Health Organization has considered as fundamental the physical, mental and social aspects of wellbeing. Such definition has stimulated the construction of biopsychosocial clinical models to cure pathologies and promote wellbeing in the different fields of medicine. Also in neonatology, a biopsychosocial approach to the ill or fragile infant is essential to achieve a successful clinical treatment and to assure the best possible future to the neonate and his/her family. Besides therapies focused on the organic aspects of an illness, sometimes
necessary to assure infant’s survival, in the neonatology setting it is clinically fundamental to consider newborn pain, newborn neurodevelopment, attachment needs, parents’ suffering, relatives’ psycho-social stress and family socio-economic conditions. A biopsychosocial approach in neonatology should always consider the benefits and actively promote kangaroo mother care (fathers too), breastfeeding, the presence of family members besides babies and psychological support to newborn’s parents and closed relatives.

8.45 a.m.-10.00 a.m. Obstetric invited lectures
Chair: Bence Csapo, Monica Piccoli

OIL-1 Bence Csapo, Leo Wurst: Breaking bad news in perinatal medicine. (A)

OIL-2 Marina Ivanisevic: Therapeutic approach in gestational diabetes. C-Peptide concentration in pregnant women with type 1 diabetes mellitus and prevalence of severe hypoglycemia (C)

Marina Ivanisevic Josip Djelmiš, Mislav Herman, Marina Horvatiček, Josip Juras

The effort to reach the ideal glycemic control in type 1 diabetic pregnancy (T1DM) is often linked with increased risk of hypoglycemia. The aim of the study was to find the effect of C-peptide concentration on severe hypoglycemia prevalence in diabetic pregnancy and its impact on insulin doses and fetal macrosomia.

Study participants.

90 women with T1DM and singleton pregnancy, who received insulin treatment for ≥24 months, were included in the study. The HbA1c was ≤8% at pregnancy confirmation. The study was conducted in Department of Obstetrics and Gynecology, School of Medicine University of Zagreb, as a part of scientific project PRE-HYPO No IP-2018-01-1284. Participants were divided into three groups according to duration of diabetes: 1. group 2 -10 years (n=36); 2. group 11 -20 years (n=36), and 3. group ≥20 years (n=18). Severe hypoglycemia was defined as glucose concentration below 3 mmol / L.

Results.

The percentage of severe hypoglycemia in the first trimester according the groups was 41.7%, 66.7% and 77.8%, respectively, and it declined in third trimester in all three groups (19.4%; 38.9% and 66.7%, respectively). The C-peptide concentration in group 1 was significantly higher throughout pregnancy when compared with group
2 and 3 ($P=0.011; p =0.015; P <0.001$). The negative correlation (Spearman) was found between C-peptide concentration and both bolus and basal insulin dose ($rs = -0.402, P = 0.012; rs = -0.412; P = 0.012$ respectively). The negative correlation was between HbA1c and C-peptide concentration ($rs = -0.765; P = 0.001$). There was significant correlation between HbA1c and neonatal weight ($r = 0.358; P = 0.001$).

**Conclusion.**

Higher C-peptide concentration was found in pregnant patients with shorter duration of diabetes. Lower prevalence of hypoglycemia and lower bolus-basal doses were required in T1DM women who had pregnancy mediated increased endogenous insulin secretion.

**OIL-3 Mária Jakó: Examination of social and intrapersonal factors of mood disorders in the ante- and postpartum period-obstetric aspects.**

**Edina Dombi1, Renáta Berta2, Gábor Németh1, Mária Jakó**

The aim of our research was to identify social, socio-demographic and intrapersonal risk factors which determine depression and anxiety in the ante- and postpartum period. We focused on the social relations, health behavior, motivation, self-efficacy and intrapersonal resources of pregnant women and mothers. Participants in this study were pregnant women and mothers who had a labor within a year. The questionnaires were filled out voluntarily, online. The novelty of our research is that besides the well-known and widely used adapted questionnaires, we developed a new scale to assess the micro-, macro- and intrapersonal factors of pregnancy motivation. The aim of the presentation is to draw attention to those affective disorders and their consequences that may occur during pregnancy and after childbirth. We would like to give a more accurate picture of those factors which contribute to the development of mood disorders in order to develop intervention programs for pregnant women.

Keywords: antepartum, postpartum, mood disorder, risk factors

**OIL-4 Monica Piccoli: Implementing WHO Standards for improving the quality of maternal and newborn care: lesson learned.**
Monica Piccoli, Giorgia Argentini and Chiara Semenzato

Background

WHO developed Standards for improving quality of maternal and newborn care (QMNC). However, there is little experience on their use, and no precise guidance on implementation.

Methods and results

We conducted during 2016-2018 a pilot study in a tertiary hospital in Northeast Italy. Information on the WHO standards were collected prospectively from 1244 mothers and 105 health workers, using field tested questionnaires. Findings led to develop, with a participative approach involving 35 stakeholders, 55 recommendations to improve the QMNC. Lesson learned from the pilot were used to further optimize study methods. Data collection tools, including a score system including all key dimensions of the WHO Standards (experience, provision and structure) to measure QMNC, have been validated. The project is currently scaled up in 9 hospitals in the Friuli Region.

Conclusions

The WHO standards can be proactively used for planning improvements of QMNC.

OIL-5, Marijana Vidmar Šimic: Abuse of pregnant women in the healthcare system. (S)

Marijana Vidmar Šimic¹, MD, Miha Lučovnik¹, MD, PhD, Vesna Leskošek², PhD, Lucija Pavše¹, Megie Krajnc¹, MsC, Ivan Verdenik¹, PhD, Isaac Blickstein³, MD, Nataša Tul¹, MD, PhD, Vislava Globevnik Velikonja¹, PhD, Tanja Premru Sršen¹, MD, PhD

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Objective
The purpose of this study was to determine the incidence of abuse in healthcare system during pregnancy and its impact on pregnancy outcomes.

**Material and Methods**

A validated screening Norvold Abuse Questionnaire for the identification of female victims was anonymously offered to all women in the first two days postpartum.

**Results**

Out of 1018 women included in the study, 6.2% reported experiencing abuse in healthcare system during pregnancy. Affected women had a higher incidence of preterm delivery (OR 2.4; 95% CI 1.2 - 4.8) and cesarean section rate (OR 2.0, 95% CI 1.1 - 3.6). Abuse in healthcare system during pregnancy was associated with sexual abuse and abuse in healthcare system during childhood (OR 4.4; CI 95% 1.2-16.2, and OR 6.9; CI 95% 1.3-35.4, respectively).

**Conclusions**

We should strive to limit potentially abusive behaviour from patients’ as well as health professionals’ point of view in order to safeguard both - patients and medical personnel.

10.45-12.00 a.m. Pediatric invited lectures Topic 2 (15 min)

Chair: Gerhard Pichler, Lev Bregnant

**PIL-1, Elisabeth Pichler-Stachl: Stress experience in mothers and fathers after preterm birth. (A)**

*Pichler-Stachl Elisabeth¹, Urlesberger Pia¹, Christian Mattersberger, Baik-Schneditz Nariae¹, Schwaberger Bernhard¹, B. Urlesberger Berndt¹, Pichler Gerhard"*

Division of Neonatology, Department of Pediatrics, Medical University of Graz, Graz, Austria

**Background:**

Preterm birth is associated with increased stress of parents.

**Objective:**

Aim was to examine age dependency of stress in fathers and mothers after preterm birth.

**Methods:**
47 mothers and 47 fathers answered the PSS:NICU after preterm birth and NICU admission of their infant. This questionnaire measures stress after preterm birth via three subscales “Looks-and-Behave” of the child, “Parental-Role-Alteration” and “Sights-and-Sounds”. Stress levels of mothers and fathers were compared and correlated to age of mothers and fathers.

**Results:**

Parental stress experience after preterm birth tended to be higher in mothers compared to fathers. Mothers showed a significant positive correlation of the “Parental-Role-Alteration” Scale and age whereas fathers did not show any significant age dependency of stress.

**Conclusion:**

Parental stress experience after preterm birth tended to be higher in mothers who showed an age dependency that has to be taken into account in the parental care.

*PIL-2, Fucic A: The newborn health risks due to maternal residency, life style and diet. (C)*

*PIL-3 Maria Jako: Examination of social and intrapersonal factors of mood disorders in the ante- and postpartum period - neonatal aspects.*

*PIL-4 Julia Cavasin: Functional neuroimaging of Kangaroo Mother Care: the neonate's point of view*

**Julia Cavasin, Pierpaolo Brovedani, Gabriele Cont, Francesco Maria Risso, Stefano Bembich**

*Division of Neonatology, IRCCS Burlo Garofolo, Trieste, Italy*

This study aimed to identify brain functioning of preterm infants associated with an affectively significant contact with their mother, the Kangaroo Mother Care (KMC) experience.

Functional activity in the frontal cortex, during the first 30 minutes of KMC, was monitored in eight very preterm infants by near-infrared spectroscopy (NIRS), a functional neuroimaging technique that measures oxy-haemoglobin (HbO$_2$) increase to identify cortical activation. To assess frontal cortex activation during KMC, changes in HbO$_2$ during a baseline, the 15$^{th}$ and the 30$^{th}$ minute of KMC were compared by one-way ANOVA.
HbO₂ increased both in the overall monitored frontal cortex (P=0.023) and in the more posterior primary motor and somatosensory area (P=0.027), already after 15 minutes of KMC.

Preterm neonates show a functional activation of the frontal cortex since the 15th minute of KMC. Even when preterm, the relationship with the mother is a powerful source of neonatal cerebral stimulation and brain development.

**PIL-5 Lev Bregant: Infants of mothers with history of drug abuse during pregnancy. (S)**

_Lev Bregant, Domen Robek, Ivan Verdenik_

_Maternity hospital Ljubljana, University medical center Ljubljana_

Since 1995 several Centers for prevention and treatment of illicit drug addiction have been established in Slovenia. The users of their services include pregnant women, who are addicted to illicit drugs, most often heroin, or are receiving substitute treatment with methadone, buprenorphine or long-active morphine.

Using National Perinatal Information system we recorded all births in Slovenia in 5-year period (2013-2017). There were 100,776 births. In Maternity hospital Ljubljana we searched the system for all infants (47), who showed signs of neonatal abstinence syndrome (ICD-10: P96.1, P04.4) and were born to mothers, who were registered drug abusers or had a history of drug abuse. Rate of primiparas was higher than general population (58,3%/48,6%) which is statistically significant, additionally, the age of primiparas from study group was significantly higher. There was a very small percentage of very young mothers, aged 19 or younger (0,4%/1,0%). We observed a significant difference in the rate of smokers among drug abusers, (44,4%/9,4%).

The difference in duration of pregnancy was not statistically significant between the study group and general population (38,64w/38,9w). Rate of stillbirths was substantially higher in the study group (4,0%/0,6%), while mortality after delivery was not different. The results in the study group showed statistically significant lower birthweight, more SGA infants (14.2%/6,1%), lower Apgar score after 1 and 5 minutes, more admisions to ICU. At the time of discharge from the ward, there were less breastfed infants (49.3%/ 70.0%) in the study group.

In this publication we also describe our practices in management of newborns and expected complications according to the mother's dose of substitute therapy.
1:00 p.m.-2:00 p.m. Special Lecture: Prof. Dr. Nandu Goswami: From basic science into diagnostic approaches

3:00 p.m.-5:00 p.m. Free Communication Session

Chair: Vislava Globevnik Velikonja, Emilia Jurkovic

FC-1 Lucija Kuder: Influence of Yoga on perinatal outcome, Slovenian experience. (S)

Department of perinatology, UKC Maribor

FC-2 Eva Mautner: High risk pregnancy and psychological outcome. (A)

Mautner Eva, Cervar-Zivkovic Mila, Stern Christina, Klaritsch Philipp, Kalchmair Hannah, Deutsch Maria, Lang Uwe, Greimel Elfriede

Many medical conditions are subsumed under the term high-risk pregnancy including for example preeclampsia, preterm conditions, gestational diabetes or monochorionic twin pregnancies. In several studies the impact of high-risk pregnancies on maternal health-related quality of life (HRQoL) and depression were examined. We found, that women with the risk of preterm delivery in pregnancy had statistically significant higher depression scores and lower HRQoL on the physical domain during pregnancy compared to women with uncomplicated gravidities. Furthermore, we found that in complicated monochorionic twin pregnancies stress and anxiety was highest accompanying intrauterine interventions during the treatment process. However maternal HRQoL of twin mothers was generally low in the postpartum period. Additionally our results showed that postnatal maternal psychological HRQoL was significantly worse in the very low preterm group compared to moderate/late preterm and term deliveries.

FC-3 Mária Jakó, Gábor Németh: Pregnancy-related crisis in sexual life. (H)

Objectives:

Healthy sexuality have psychological and physiological significance in bonding and keeping the couple’s quality of life high. Except for pregnancies when there is a real medical contraindication for regular intercourse, fear and misconceptions may mislead the couples. Our goal was to find out about the misconceptions regarding healthy sexuality during and right after pregnancy.

Methods:
Patients were recruited at the Department of Obstetrics and Gynaecology, University of Szeged and they completed an anonym questionnaire in the first three days postpartum.

**Results:**

Sexual habits showed wide variations. The number of sexual intercourses, orgasms, manual-genital contact, oral-genital contact and masturbation decreased. 78% of the participants did not dare to ask their caregivers about this topic but felt they needed more information.

**Conclusions:**

Patients with risk pregnancies are more aware of their possibilities, while in case of healthy pregnancies misconceptions and fear are characteristic. Sexual education should be part of perinatal care.

**FC-4 Christina Stern: The impact of severe preeclampsia on maternal quality of life. (A)**

*Stern C, Trapp E, Mautner E, Deutsch M, Lang U, Cervar-Zivkovic M*

**Background:**

As preeclampsia is associated with severe adverse pregnancy outcomes for the mother and the fetus, this study aims to evaluate parameters of health related quality of life (HrQuL) between women after preeclampsia compared to a reference sample.

**Methods:**

The study group consists of 95 women after preeclampsia who answered a questionnaire concerning physical and mental scores of quality of life (SF-12). Comparisons were performed between three constituent groups regarding the severity of disease, i.e. mild, severe and superimposed preeclampsia, as well as comparisons between each group and a reference sample.

**Results:**

The whole study group as well as the one after severe preeclampsia shows significantly worse scores regarding the mental HrQuL compared to the other study groups as well as compared to the reference sample (p<0.001). Women after severe disease show significantly worse results compared to women after mild disease (p=0.030). Women after superimposed preeclampsia were not reduced, neither in mental nor in their physical HrQoL compared to the reference sample (p=0.939 and 0.895).
Conclusion:

This study demonstrates that women after severe preeclampsia show a substantial limitation in their mental quality of life. Implementation of indicators of HrQoL in a personalized and interdisciplinary concept of pregnancy management aims to improve pregnancy outcomes.

FC-5 Noemi Elisabeth Ginthör: How to use TCM in pregnancy? (A)

FC-6 Varga D: Postpartal cardiovascular effects of gestational diabetes in consideration of biopsychosocial factors. (A)

Even though gestational diabetes is often regarded as a minor problem, studies suggest a link between gestational diabetes and cardiovascular risks in later life. Fifteen to seventeen weeks postpartum, 48 women with pregnancy complications (24 gestational diabetes, 24 preeclampsia) and 30 women with uncomplicated pregnancies were exposed to a self-relevant stressor in a standardized stress-reactivity protocol. We analyzed physiological parameters as well as psychosocial variables, considering the personal living conditions of new mothers.

During task performance, women with pregnancy complications showed a significantly blunted cardiovascular reactivity compared to women without pregnancy complications. These findings might be signs of an impaired sympatho-vagal balance with possible negative long-term cardiovascular effects.

Consequently, while the exact mechanisms responsible for our findings need further investigation, the “stress-test” pregnancy might offer an opportunity to identify women susceptible to the development of a vicious cycle involving microvascular impairments and a sympatho-vagal imbalance, possibly aggravated by unfavorable psychosocial factors.


Preeclampsia, a pregnancy-specific disorder, is not only associated with health issues during gestation but also with negative long-term effects on maternal cardiac health. To investigate these long-term effects, 38 women after a healthy pregnancy and 35 women diagnosed with preeclampsia were examined five times over the time course of 32 weeks (16–48 weeks postpartum).

Each time, participants completed the same procedure, consisting of psychological tasks and questionnaires, accompanied by cardiovascular recordings. As the cardiac response to acute stress can be regarded as an indicator of cardiac health, we
analyzed heart rate reactivity in response to a mild stressor. Psychosocial variables, i.e. social support, depression, perceived stress, loneliness and physical fitness, were assessed via questionnaires to unveil possible moderating effects of psychosocial factors on heart rate reactivity. These relationships between psychosocial factors and maternal cardiac health after pregnancy may provide new insights into preventing negative long-term consequences of pregnancy complications.

**FC-8 Eva Trapp: How to go with social deprived young persons in pregnancy?**

*Department of Neurology and Psychiatry for Children and Adolescents*  
*KABEG KLINIKUM Klagenfurt am Wörthersee*

The biopsychosocial model represents a very important theoretical framework in the field of human medicine. According to this model we have to focus on biomedical and psychosocial aspects in order to understand the complex interaction of different system levels.

There is evidence in literature that maternal social deprivation shows an association with an increased risk of perinatal outcomes. Besides social deprivation also poor social support is considered to be associated with poor fetal outcomes.

Thus, we must aim to focus on supporting pregnant women not only in biomedical as well as in psychosocial aspects.

Kapaya H et al.: Deprivation and poor psychosocial support are key determinants of late antenatal presentation and poor fetal outcomes – a combined retrospective and prospective study. *BMC Pregnancy Childbirth* 2015

**FCS-9 Barbara Schmidt-Zeitler: What is the optimal psychosocial management of drug dependent persons in pregnancy?**

*Department of Neurology and Psychiatry for Children and Adolescents*  
*KABEG KLINIKUM Klagenfurt am Wörthersee*

Numerous psychiatric disorders can cause adverse pregnancy outcomes like preterm birth, low birth weight, small for gestation age, stillbirth and infant death. Among them
the abuse of illicit substances can lead to a number of social- as well as health problems for the pregnant women as well as the newborn.

Heroin and other opiates can cause significant abstinence symptoms for the newborn (NAS).

In spite of the known effects of nicotine and alcohol such as poor intrauterine growth or fetal alcohol syndrome associated with developmental delay and learning disabilities, guidelines and therapeutical strategies only exist for opiate dependency in pregnancy.

The goal of medical care is to ensure survival, decrease the use of illicit substances and increase health and function by early detection of pregnancy.

It comprises the treatment of comorbid mental disorders, the treatment of sexually transmitted diseases and infections and the prevention of withdrawal symptoms – therefore, the goal is to establish an opioid maintenance treatment (OMT).

Given the low socio-economic status and distrust towards medicinal faculties of these women, a multiprofessional team of different experts is required to address different issues.

The management of this problematic group of patients incorporates interventions at low threshold, individual treatment and longterm support during the pregnancy.

FCS-10 Veronika Anzeljc (S)
Vaginal delivery after cesarean section, Slovenian experience.

Department of perinatology, UKC Maribor

FC-11, Vislava Globevnik Velikonja: Multimodal screening for biopsychosocial high risk pregnant women. (S)

Vislava Globevnik Velikonja, University Medical Centre Ljubljana

Mental disorders in pregnancy are common, with known incidences of individual disorders; however, due to comorbidity we cannot simply add them up. Experts estimate that at least 15% of pregnant women meet the clinical criteria for at least one of the disorders. Unrecognized and untreated disorders have adverse effects on the pregnant woman and fetus, so efficient screening is crucial, alongside a timely and professional assistance within the healthcare system. Between 2017 and 2019, Slovenia introduced a multimodal screening for depression, anxiety, violence and
drug, tobacco and alcohol addiction in the perinatal period. It involves every trimester and first post-partum visit screening. Gynecologic teams have been trained during one-day workshops to perform screening and were provided with appropriate materials, and a manual and guidelines for the management of recognized biopsychosocial high-risk pregnant women. Simultaneously, a psychologists/psychiatrists network was set up and educated to adequately assist women in the perinatal period.

**FC-13, Lea Bombač: Perinatal outcomes of pregnant refugees/asylum seekers in Slovenia during the 2015-2016 “humanitarian corridor”. (S)**

Introduction: During 2015 and 2016, a large number of refugees, including women, travelling along the so-called Balkan route crossed Slovenia. Studies increasingly show that women who migrate have different perinatal health outcomes compared to citizens.

**Aim:**

To review perinatal outcomes in pregnant refugees/asylum seekers giving birth in Slovenia during the 2015-2016 “humanitarian corridor”.

**Methods:**

Questionnaires on numbers of pregnant refugees/asylum seekers giving birth in Slovenia during 2015-2016, their perinatal outcomes and their perinatal care were sent to state institutions (Ministry of Health, Ministry of Internal Affairs, and National Institute for Public Health) and all 14 country’s maternity hospitals.

**Results:**

Data on perinatal outcomes in refugees/asylum seekers were available only at maternity hospitals, suggesting there is no national governmental system for collecting information on health of pregnant refugees/asylum seekers in Slovenia. Twelve refugees/asylum seekers who delivered in Slovenia during the “humanitarian corridor” in 2015-2016 were identified. Three (25%) of these deliveries were preterm births (<37 weeks of gestation). There were two (16%) emergency cesarean deliveries and no stillbirths or neonatal deaths. Average neonatal birth weight was 3130 g.

**Discussion:**

A very high (25%) preterm birth rate and a high emergency cesarean rate (16%) in the population of refugees/asylum seekers delivering in Slovenia during 2015-2016 “humanitarian corridor” was found. This study also identified several inadequacies in perinatal data collection in pregnant refugees/asylum seekers in Slovenia.
Conclusions:

Given the potentially higher incidence of perinatal complications, such as preterm birth or need for emergency cesarean delivery, seen in the present study, it is important to develop systems of data collection in pregnant refugees/asylum seekers.