SCIENTIFIC PROGRAMME

Friday, 13 October, 2017

08:50 – 09:00 **Opening ceremony**
Gábor Németh, director
Department of Obstetrics and Gynaecology, University of Szeged, Hungary

Mode and location of delivery and perinatal outcome

09:00 – 09:40 **Introductory lectures**
Chair: Gábor Németh, Gerhard Pichler

09:00 – 09.20 Mode and location of delivery and perinatal outcome - obstetric point of view
Lili Steblovnik
Department of Perinatology, Division of Obstetrics and Gynaecology, University Medical Centre Ljubljana, Slovenia

09:20 – 09:40 Mode and location of delivery and perinatal outcome: neonatological ascpects
Ernst Prehtahler
Division of Neonatology, Department of Pediatrics, Medical University of Graz, Austria

09:40 – 09:45 **Technical break**

09:45 – 11:00 **Invited lectures – Obstretric aspects**
Chair: Tanja Premru-Sršen, Yoram Meir

09:45 – 10:00 The beginnings of contemporary home births in Slovenia
Eva Macun [1,] Nina Radin [2]
1 General Hospital Jesenice, Slovenia
2 Independent midwife, Ljubljana, Slovenia

10:00 – 10:15 Do time of birth, unit volume and staff experience impact neonatal and maternal outcome in deliveries ≥ 34+0 gestational weeks? - a population-based study on 87,073 neonates
Philipp Reif[1], Gerhard Pichler[2], Antonia Griesbacher[3], György Lehner[1], Wolfgang Schöll[1], Uwe Lang[1], Hannes Hofmann[4], Daniela Ulrich[1]
1 Department of Obstetrics and Gynecology, Medical University of Graz, Austria
2 Division of Neonatology, Department of Pediatrics, Medical University of Graz, Austria
3 Risk Assessment, Data and Statistics, Austrian Agency for Health and Food Safety, Graz, Austria
4 Department of Obstetrics and Gynecology, Hospital Feldbach, Austria

10:15 – 10:30 In utero transfer: A comparison between a policy of transfer at <31 wks vs. transfer at <34 wks gestation. The Bassano del Grappa experience
Yoram J Meir, Daniela Perin, Maria C. Mangano, Paola Lanza, Cristina Tumbarello, Steania Gazzola, Giorgia Cavalli, Enrica Colangelo, Felice Sorrentino, Guglielmo Stabile, Maria Giovanna Arsie
Obstetrics Gynecology Operative Unit, Bassano del Grappa, Italy

10:30 – 10:45 Speaker from Croatia

10:45 – 11:00 Perinatal outcome in breech presentation – mode of delivery
János Sikovanyecz, Loránd Rénes, Hajnalka Orvos, Gábor Németh
Department of Obstetrics and Gynaecology, University of Szeged, Hungary

11:00 – 11:30 Coffee break

11:30 – 12:45 Invited lectures – Neonatological aspects
Chair: Lilijana Korhauser Cerar, Zita Gyurkovits

11:30 – 11:45 Preterm infants in NICU Ljubljana - comparison between maternal transport and neonatal transport outcome
Tomaž Križnar
University Medical Centre Ljubljana, Ljubljana, Slovenia

11:45 – 12:00 Cerebral oxygenation immediately after caesarean section and mode of maternal anaesthesia
Isabella Willfurth, Nariae Baik-Schneditz, Bernhard Schwaberger, Lukas Mileder, Berndt Urlesberger, Gerhard Pichler
Division of Neonatology, Department of Pediatrics, Medical University of Graz, Austria

12:00 – 12:15 Speaker from Italy

12:15 – 12:30 Neonatal outcomes of in utero transports to the Croatian Referral Perinatal Center
M. Ilijic Krpan, M. Starcevic, Emilia Juretic
Department of Obst. and Gyn., Clinical Hospital Center Zagreb, Croatia

12:30 – 12:45 Respiratory distress in term and preterm neonates
Zita Gyurkovits, Bence Szabó, Tamás Bitó, Tamás Sári, Gábor Németh, Hajnalka Orvos
Department of Obstetrics and Gynaecology, University of Szeged, Hungary

12:45 – 14:00 Lunch break

14:00 – 14:30 Special lecture
Chair: Ernst Prethaler, Tamás Bitó

Anaesthesia for caesarean section - Decision making
Ágnes Orbán, Zsolt Molnár
Dept. of Anaesthesiology and Intensive Therapy, Faculty of Medicine, University of Szeged, Hungary

14:30 – 14:35 Technical break

14:35 – 15:45 Free communications
Chair: Mila Cervar-Zivkovic, Tomaž Križnar

14:35 – 14:45 Are weight gain and BMI independent risk factors of operative delivery? Evidence from a multicenter prospective study
Alice Sorz, Gianpaolo Maso, Maria Bernardon, N. Santangelo, E. Rizzante, I. Della Pietà, S. Parolin, M. Piccoli

High Risk Pregnancy Unit. Institute for Maternal and Child Health, IRCCS Burlo Garofolo, Trieste, Italy

14:45 – 14:55 Does third-trimester cervical length aid in predicting time of first stage of labor?
György Léhner[1], Philipp Reif[1], Alexander Avian[2], Martina Kollmann[1], Ioana-Claudia Lakovschek[1], Uwe Lang1, Daniela Ulrich[1]
1 Department of Obstetrics and Gynecology, Medical University of Graz, Austria
2 Department of Medical Statistics, Medical University of Graz, Austria

14:55 – 15.05 3-dimensional power Doppler ultrasound examination in pregnancies complicated by intrauterine growth restriction
András Molnár[1]; Andrea Surányi[1]; Tibor Nyári[2]; Gábor Németh[1]
1 Department of Obstetrics and Gynecology, University of Szeged, Hungary
2 Department of Medical Physics and Informatics, University of Szeged, Hungary

15:05 – 15:15 Screening and prevention of Cytomegalovirus infection during pregnancy - prospective study
Zoltán Pál[1], Márta Szűcs[1], Gabriella Terhes[2], Gábor Németh[1], Edit Urbán[2]
1 Department of Obstetrics and Gynecology, University of Szeged, Hungary
2 Institute of Clinical Microbiology, University of Szeged, Hungary

15:15 – 15:25 Prenatal ultrasound alterations in cystic fibrosis
Dániel Balogh[1], Andrea Surányi[1], Olga Bede[2], Gábor Németh[1]
1 Department of Obstetrics & Gynaecology, University of Szeged, Hungary
2 Hospital of Bács-Kiskun County, Pediatric Cystic Fibrosis Center, Kecskemét, Hungary

15:25 – 15:35 Psychological support for parents who lost a child during pregnancy or soon after birth
Megie Krajnc, Vislava Globevnik Velikonja
Clinical Psychology Service, Department of Perinatology, Division of Obstetrics and Gynaecology, University Medical Centre Ljubljana, Slovenia

15:35 – 15:45 Depression screening and psychological intervention in pregnancy care and their impact on complications during pregnancy
Emőke Adrienn Hompoth [1], Annamária Töreki[1], Veronika Baloghné Fűrész [2]
1 Department of Emergency Medicine, University of Szeged, Hungary
2 Department of Obstetrics and Gynecology, University of Szeged, Hungary

15:45 – 16:15 Coffee break

16:15 – 17:15 Free communications
Chair: Ágnes Orbán, Gianpaolo Maso

16:15 – 16:25 Indices of reduced adaptability of cardiovascular function after pregnancy
Karin Schmid-Zalaudek[1], Helmut Karl Lackner[1], Vassiliki Kolovetsiou-Kreiner[2], Ilona Papousek[3], Uwe Lang[2], Manfred Georg Moertl[4]
1 Department of Physiology, Medical University Graz, Austria
2 Department of Obstetrics and Gynecology, Medical University of Graz, Austria
3 Department of Psychology, Biological Psychology, University of Graz, Austria
4 Department of Obstetrics and Gynecology, Clinical Center, Klagenfurt, Austria

16:25 – 16:35 Preoperative autologous blood donation in patients with placenta previa – costly overtreatment or good clinical practice?
Denis Ćatić[1], Lili Steblovnik[1], Ana Milojković[2]
1 Department of Obstetrics and Gynecology, University Medical Centre, Ljubljana, Slovenia
2 Blood Transfusion Centre of Slovenia, Ljubljana. Slovenia

16:35 – 16:45 An atypical presentation of postpartum ovarian vein and inferior vena cava thrombosis in a 37-year old multipara
Tamara Serdinšek[1], Mateja Kranjc[2], David Šuran[3], Mirjana Brvar[4], Lucija Kuder[5], Faris Mujezinović[5]
1 Clinic for Gynaecology and Perinatology, University Medical Centre Maribor, Slovenia
2 Department of Gynaecology and Obstetrics, General Hospital Ptuj, Slovenia
3 Department of Cardiology and Angiology, Clinic for Internal Medicine, University Medical Centre Maribor, Slovenia
4 Department of Radiology, University Medical Centre Maribor, Slovenia
5 Department of Perinatology, Clinic for Gynaecology and Perinatology, University Medical Centre Maribor, Slovenia

16:45 – 16:55 Pregnancy complications: challenge and/or chance for further cardiovascular risk in later life?
Helmut K. Lackner[1], Ilona Papousek[2], Karin Schmid-Zalaudek[1], Elisabeth M. Weiss[2], Andrea Roessler[1], Uwe Lang[3], Niluefer Aydin[4], Mila Cervar-Zivkovic[3], Manfred G. Moertl[5]
1 Department of Physiology, Medical University of Graz, Austria
2 Department of Psychology, Biological Psychology, University of Graz, Austria
3 Department of Obstetrics and Gynecology, Medical University of Graz, Austria
4 Department of Psychology, Alps-Adria-University Klagenfurt, Austria
5 Department of Obstetrics and Gynecology, Clinical Center, Klagenfurt, Austria

16:55 – 17:05 Pathologic placentation in pregnancies: diagnostic criteria and recommendations for management
Bence Csapó
Department of Gynecology and Obstetrics, Medical University of Graz, Austria

17:05 – 17:15 Acute promyelocitic leucemia in pregnancy: a case report
Sara Mugerli[1], Uroš Mlakar[2], Enver Melkić[2], Tanja Premru-Sršen[3]
1 Nova Gorica General Hospital, Nova Gorica, Slovenia
2 Department of Hematology, University Medical Centre Ljubljana, Slovenia
3 Department of Perinatology, University Medical Centre Ljubljana, Slovenia

17:15-17:20 Technical break

17:20-18:30 Free communications
Chair: Laura Ghiro, Hajnalka Szabó

17:20 – 17:30 Biomarkers (sFlt-1/PlGF)- their dynamics in the course of preeclamptic pregnancies and fetal and maternal outcomes
Christina Fastenmeier, Christina Stern, Ioana Lakovschek, Karoline Mayer-Pickel, Vassiliki Kolovetsiou-Kreiner, Bence Csapo, Barbara Obermayer-Pietsch,

Uwe Lang, Mila Cervar-Zivkovic
Department of Gynecology and Obstetrics, Medical University of Graz, Austria

17:30 – 17:40 Association of preeclampsia and auto-antibodies
Karoline Mayer-Pickel, Christina Stern, Uwe Lang, Mila Cervar-Zivkovic
Department of Obstetrics, Medical University Graz, Austria

17:40 – 17:50 Cerebral oxygenation immediately after birth and outcome/mortality of preterm neonates
Elisabeth Pichler-Stachl, Jeremia Gradenegger, Nariae Baik-Schneditz, Bernhard Schwaberger, Lukas Mileder, Berndt Urlesberger, Gerhard Pichler
Division of Neonatology, Department of Pediatrics, Medical University of Graz, Austria

17:50 – 18:00 Does the birth mode have an influence on the active earacupuncture points in neonates?
Jasmin Stadler[1, 2], Christina Flucher[1], Nicolai Tritschler[1], Gerhard Pichler[1], Berndt Urlesberger[1, 2], Wolfgang Raith[1,2]
Division of Neonatology, Department of Pediatrics, Medical University of Graz, Austria
1 Department of Pediatric and Adolescent Medicine, Graz, Austria
2 Research Group for Paediatric Traditional Chinese Medicine, Graz, Austria

18:00 – 18:10 The forgotten majority - the outcome of moderately preterm infants during the first 3 years of life
Hajnalka Szabó
Department of Pediatrics, "Szent György" University Teaching Hospital of Country Fejér, Székesfehérvár, Hungary

18:10 – 18:20 Pathologic alterations of the umbilical cord and placenta in IUGR - etiology of IUGR or „fetal response”
Mária Jakó[1], György Bártfai[1], László Kaizer[2], Gábor Németh[1], Andrea Surányi[1]
1. Department of Obstetrics and Gynecology, University of Szeged, Hungary
2. Department of Pathology, University of Szeged, Hungary

18:20 – 18:30 Pharmacodynamic studies of placental and umbilical vessels
Mária Jakó[1], Andrea Surányi[1], Dóra Domokos[2], Róbert Gáspár[2], Gábor Németh[1], György Bártfai[1]
1 Department of Obstetrics and Gynecology, University of Szeged, Hungary
2 Department of Pharmacodynamics, Faculty of Pharmacology, University of Szeged, Hungary

20:00 Gala dinner

SCIENTIFIC PROGRAMME

Saturday, 14 October, 2017

Maternal, fetal and neonatal mortality

09:00 – 09:40 **Introductory lectures:**
Chair: Marina Ivanisevic, Hajnalka Orvos

09:00 – 09.20 Obstetric aspects: Maternal, fetal and neonatal mortality in “the Alpe Adria countries"
Josip Djelmis
Dept. of Obstetrics and Gyanecology, School of Medicine, University of Zagreb, Croatia

09:20 – 09:40 Maternal, fetal and neonatal mortality. Neonatological aspects
Laura Ghiro, Italy
Department of Pediatrics, Vicenza, Italy

09:40 – 09:45 **Technical break**

09:45 – 11:00 **Invited lectures – Obstretric aspects**
Chair: Josip Djelmis, Wolfgang Walcher

09:45 – 10:00 Monitoring Maternal Mortality in Slovenia: Results and Response
Barbara Mihevc Ponikvar[1], Tanja Premru-Sršen[2]
1 National Institute of Public Health, Ljubljana, Slovenia
2 Department of Perinatology, University Medical Centre, Ljubljana, Slovenia

10:00 – 10:15 Has there been a change in maternal mortality over the last five decades?
Karoline Mayer-Pickel, Edgar Petru, Eva-Christina Weiss , Hellmuth Pickel , Manfred Mörtl, Uwe Lang
Department of Obstetrics, Medical University, Graz, Austria

10:15 – 10:30 Risk-adjusted operative delivery rates and maternal-neonatal outcomes as measures of quality assessment in obstetric care: a multicenter prospective study
Gianpaolo Maso, M. Bernardon, A. Sorz, N. Santangelo, E. Rizzante, I Della Pietà, S. Parolin
High Risk Pregnancy Unit. Institute for Maternal and Child Health, IRCCS Burlo Garofolo, Trieste, Italy

10:30 – 10:45 Speaker from Croatia

10:45 – 11:00 Maternal mortality in Hungary
Tamás Bitó[1], György M Csákány[2], Zita Gyurkovits[1], Hajnalka Orvos[1], Gábor Németh[1]
1 Department of Obstetrics and Gynaecology, University of Szeged, Hungary
2 Department of Obstetrics and Gynecology, “Ferenc Jahn” South-Budapest Hospital, Hungary

11:00 – 11:30 **Coffee break**

11:30 – 12:15 **Invited lectures – Neonatological aspects**
Chair: Emilia Juretic, Miklós Szabó

11:30 – 11:45 Neonatal mortality - trends in Slovenia
Sonja Tomšič, Barbara Mihevc Ponikvar
National Institute of Public Health, Ljubljana, Slovenia

11:45 – 12:00 Mortality and short term outcome of preterm neonates ≤26+6 weeks of gestation at the Division of Neonatology Graz
Gerhard Pichler, Elisabeth Pichler-Stachl, Berndt Urlesberger
Division of Neonatology, Department of Pediatrics, Medical University of Graz, Austria

12:00 – 12:15 Speaker from Italy

12:15 – 12:30 Neonatal mortality in Croatia
Vedrana Guszak[1], Urelija Rodin[2, 3], Boris Filipović-Grčić[4, 5]
1 University Hospital Center Zagreb, Department of Obstetrics and Gynecology, Division of Neonatology, Zagreb, Croatia
2 Croatian Institute of Public Health, Zagreb, Croatia
3 School of Public Health „Andrija Štampar“, Zagreb, Croatia
4 University Hospital Center Zagreb, Department of Pediatrics, Divisionof Neonatology and Neonatal Intensive Medicine, Zagreb, Croatia
5 University of Zagreb, School of Medicine, Zagreb, Croatia

12:30 – 12:45 Infant mortality in Hungary, trends and contributors
Miklós Szabó
1st Dept. of Pediatrics, NICU, Semmelweis University, Budapest, Hungary

12:45 – 13:00 **Closing ceremony**
Gábor Németh
Department of Obstetrics and Gynaecology, University of Szeged, Hungary
Tanja Premru-Sršen
Department of Perinatology, University Medical Centre Ljubljana, Slovenia (invitation for 2018)

ABSTRACTS (in order of appearence)

Mode and location of delivery and perinatal outcome

Lili Steblovnik

Department of Perinatology, University Medical Centre Ljubljana, Slovenia

As there is an increasing incidence of cesarean section rates in the recent years, there is also an increasing trend of planned home deliveries.
For healthy women the delivery in a hospital setting with possible interventions and all the medical staff present all the time feels medicalised, thus lowering her satisfaction with an otherwise physiological event. Furthermore, it has been shown that the rate of interventions in healthy pregnancies is higher in a hospital setting than in home birth.

Although interventions are undertaken in hospitals, studies confirm that the CS rate in women intended to birth at home is lower compared to low-risk women in hospital birth (5.2% v 8.1 %). The risks and benefits of different delivery modes and locations are evaluated with neonatal outcomes (Apgar scores, stillbirths, neonatal deaths, intensive care admission) and maternal outcomes. Maternal satisfaction with birthing experience is becoming a prominent issue in the evaluation.

There were some attempts for randomized controlled trials in home birth outcomes, but were not feasible because of safety being an outcome and women wishing to choose the place of birth by themselves. Only observational studies with known biases (one of them is the artificially low rate of interventions such as caesarean sections in home birth, because women would be transferred to the hospital prior to the intervention) are possible.

Comparing large observational studies in different health systems is also a challenge. There are differences in home birth attendants (physicians, midwives with or without hospital experience, nurse–midwives, licensed or non-licensed) and hospital transfer possibilities. The data taken from national databases in some countries do not distinguish between planned and unplanned home delivery, which usually has higher morbidity and mortality rates because of prematurity or no prenatal care.

Across all studies, women intending to birth at home are significantly less likely to have obstetric interventions, regardless of where they ultimately give birth. Women who wish to have a caesarean section or strong analgesia during the delivery choose hospital birth and full medical assistance. Medical interventions that are probably unnecessary should also be considered as a negative outcome.
The safety of home delivery is dependent on several factors. We are preparing a national policy and guidelines to assure the safety of possible planned home deliveries in Slovenia.

Mode and location of delivery and perinatal outcome: neonatological ascpects

Ernst Prethaler

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

Abstract was not received

The beginnings of contemporary home births in Slovenia

Eva Macun[2], Nina Radin[1]

1 Samostojna babica Nina Radin, s.p., Ljubljana, Slovenia
2 General Hospital Jesenice, Jesenice, Slovenia

Objectives: Slovenia is one of the countries where the homebirth (HB) tradition ended after WWII but are regaining their popularity. Along with that came problems caused by non-regulation. Complications of HB arose awareness of HB in Slovenia and women and professionals demanded regulation from Ministry of Health to limit unnecessary complications, misunderstanding, administrative obstacles, discrimination, wrong media reporting. In the present year Ministry of Health organised a multidisciplinary working group with intention to set recommendations for HB. There are currently 3 slovenian and one foreign midwife licensed, but HBs are also attended by unlicensed people.
Most common present problems include: emergency/complications of unknown HB, unknown/unlicensed midwives, administrative problems of unregistered newborns, transfer pathways, lack of communication and distrust, access to emergency drugs at home, difficulty obtaining doctor's certificate and birth registration, neonatal check up screening tests, frustration at transfer, cost refund.
Example of good practice: General Hospital Jesenice is working in cooperation with HB midwives who can attend a birth of their client in the hospital.
Based on literature the rate of transfers in around 50% in primiparas. As there are still a low number of cases and data not available we looked at medical records of all planned HBs attended by one licensed midwife.

Methods: We analysed all planned HB attended by one licensed midwife from 2014 to 2017. Basic statistic was made from medical records

Results: 34 planned HBs (8 primiparas, 26 multiparas) of which 29 (85,3%) gave birth at home with following results: 6 postpartum haemorrhage greater than 500 ml, none postpartum haemorrhage greater than 1000 ml. None APGAR score less than 7 at 5 min. No episiotomy and 3rd or 4th degree tear and 4 waterbirths. There were 3 (8,8%) intrapartum non-emergency (3 primiparas) and 2 (5,9%) intrapartum emergency transfers (1 primipara, 1 multipara). There was 1 (2,9%) postpartum transfer of multipara. Reasons for intrapartum transfers were failure to progress, decelerations and haemorrhage. Reason for postpartum transfer was losing consciousness with no signs of shock. All planned HBs resulted in vaginal births with 1 episiotomy in the hospital; there was no instrumental delivery.

Conclusions: Regulation of HB is needed. Data on HB in Slovenia is limited. Cooperation of independent midwives and General Hospital Jesenice is an example of a good practice.

Keywords**:** homebirth, informed decision, midwifery, regulation

Do time of birth, unit volume and staff experience impact neonatal and maternal outcome in deliveries ≥ 34+0 gestational weeks? - a population-based study on 87,073 neonates

Philipp Reif[1], Gerhard Pichler[2], Antonia Griesbacher[3], György Lehner[1], Wolfgang Schöll[1], Uwe Lang[1], Hannes Hofmann[4], Daniela Ulrich[1]

1. Department of Obstetrics and Gynecology, Medical University of Graz, Graz, Austria
2. Division of Neonatology, Department of Pediatrics, Medical University of Graz, Graz, Austria
3. Risk Assessment, Data and Statistics, Austrian Agency for Health and Food Safety, Graz, Austria
4. Department of Obstetrics and Gynecology, Hospital Feldbach, Feldbach, Austria

Objectives: Most women deliver during off-hours while most maternity units are better staffed during regular working hours. This imbalance is a potential risk factor for adverse outcomes. We investigated whether time of birth, unit volume and staff experience impact neonatal and maternal outcome.

Methods: We conducted a population-based study on all 87,073 neonates ≥ 34+0 weeks gestational age delivered at the 10 public obstetric departments in the Austrian province of Styria in 2004-2015 and their mothers. Short-term-neonatal-outcome-data were used to create composite adverse- and severe-adverse-outcome measures. Generalized-Linear-Mixed-Models were used to calculate the risk for adverse and severe-adverse neonatal outcomes and maternal outcome variables (emergency CS, secondary CS, assisted-vaginal delivery, episiotomy, fetal scalp blood sampling, postpartum complications) according to time of birth, unit volume and staff experience.

Results: The odds ratio for neonatal adverse events during off-hours compared to office hours was 1.1 [95%CI: 1.01 - 1.19] and for severe adverse events 1.49 [95%CI: 1.17 - 1.90]. There were no significant differences in neonatal outcome comparing day (7:30am - 10pm) and night (10:01pm - 7:29am). Units with 500-1000 deliveries per year had the lowest risk for adverse events. Adverse and severe adverse neonatal outcomes were least common for midwife-guided deliveries and increased with the level of experience of the doctors attending delivery.
Emergency cesarean sections were less common during nighttime (OR 0.61, 95%CI: 0.50 – 0.74) compared to daytime and secondary cesareans in general less common during off-hours (OR 0.89, 95%CI: 0.80 – 0.99). None of the primary variables impacted the incidence of assisted-vaginal deliveries. Compared to deliveries where residents were present, episiotomies were performed more frequently by consultants (OR: 1.34, 95%CI: 1.27- 1.40) and less frequent by midwives (OR: 0.21, 95%CI: 0.17 – 0.27) and interns/GPs (OR: 0.51, 95%CI: 0.48 – 0.55). Fewer episiotomies were performed during off-hours (OR: 0.89, 95%CI: 0.85 -0.94) and in units with <500 deliveries (OR: 0.34, 95%CI: 0.21 – 0.56). Fetal scalp blood sampling was done less frequently in deliveries with interns/GPs attending (OR: 0.25, 95%CI: 0.20 – 0.31); less frequently during the afternoon period (OR: 0.90, 95%CI: 0.83 – 0.99) and more often during nighttime (OR: 1.15, 95%CI: 1.06 – 1.25). Maternal postpartum complications occurred rarely after uncomplicated deliveries with midwives (OR: 0.23, 95%CI: 0.07- 0.74) and more often after deliveries where a consultant got involved (OR: 1.20, 95%CI: 1.03 – 1.40).

Conclusions: Deliveries during off-hours were associated with increased adverse and severe-adverse neonatal outcomes. No differences of neonatal outcome during afternoon and nighttime led one to assume that fatigue of the attending staff during 24 hour shifts is no main contributor

to the incidence of adverse events. Low-risk deliveries can be managed by less experienced staff with no negative impact on feto-maternal outcome. Therefore, increasing presence of senior obstetricians in labor ward during nighttime appears to be less important than getting a better balance in total labor ward staff size in office hours and off-hours. Obviously the ability to activate experienced staff members in very short time has to be maintained.

In utero transfer: A comparison between a policy of transfer at <31 wks Vs. transfer at < 34 wks gestation. The Bassano del Grappa experience.

Yoram J Meir, Daniela Perin, Maria C. Mangano, Paola Lanza, Cristina Tumbarello, Steania Gazzola, Giorgia Cavalli, Enrica Colangelo, Felice Sorrentino, Guglielmo Stabile, Maria Giovanna Arsie

OB/GYN Operative Unit, Bassano del Grappa, Italy

Objectives: In utero transfer, whenever necessary and possible, is known to be safer than transfer of a very premature or compromised neonate. In Italy, in spite of the fact that guidelines published by the National Institute of Health are available, different policies of in utero transfer are adopted in different regions, and also among community and referral hospitals within the same region. While the transfer of an unstable neonate is a procedure that has been well codified, in utero transfer has still many unresolved questions. Questions arise in some places for the late preterm. Questions also arise in cases of prematurity at gestational ages between 28 and 32 wks, or between 32 and 34 wks, in hospitals without a NICU, but with the presence of expert neonatologists 24/24 and equipped with a neonatal pathology unit.
The policy that was adopted in our Department until the 31/12/2015 was in utero transfer whenever there was a threatened premature delivery or a complication that could require a premature delivery at ≤ 31 wks gestation. A multidisciplinary provincial commission established this policy in 2014 after taking into consideration the expertise and resources of each of the five maternity hospitals in the province of Vicenza. In the year 2016 the Veneto region delivered new instructions for Maternities in which it was stated that hospitals are divided in 1st and 2nd level hospitals (by the presence or absence of a NICU) and hospitals quoted as 1st level were supposed to introduce in utero transfer at ≤ 34 wks gestation. From June 2016 we adopted this new policy. Purpose of this study was to evaluate the impact of changing the policy of in utero transfer on the number of transfers, number of returns and on pregnancy outcome.

Methods: The number of in utero transfers, the return rate and pregnancy outcome were compared between 2 periods: 1) between 2013 and 2016; 2) between 2016 and 2017.

Results: The number of transfers increased significantly in period 2. So were the numbers of returns from 2nd level. We did not find a significant difference as gestational age at delivery, mode of delivery, perinatal mortality and morbidity were concerned.

Conclusions: Although the figures are insufficient to draw definitive conclusions, we are convinced that the level of expertise and the resources in our Department could let us handle neonates at ≥ of 32 wks gestation without worsening the outcomes. Putting the threshold at a higher gestational age only increases the transfer and return rate.

Keywords**:** In utero transfer, prematurity, pregnancy complications

Perinatal outcome in breech presentation – mode of delivery

János Sikovanyecz, Loránd Rénes, Hajnalka Orvos, Gábor Németh

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

Objectives: We had a preliminary study, where we compared the short-term neonatal outcome of singleton, term (≥37th weeks of gestation) neonates in complete or frank breech presentation according to the ways of delivery (vaginal delivery [VD] vs. caesarean section [CS]). The database of this preliminary study was completed with the data received from 2016. We wanted to know, whether the elevated rate of CS among fetuses in breech presentation is changed or not?

Methods: In the preliminary study we used data of five different years from 1991 to 2006, with five-year gaps between each year of sampling and the data from 2016. There were 10296 deliveries in the preliminary study and 2590 in 2016. From the 12886 deliveries 340 fullfilled our criteria (2,6%).

Results: The rate of CS was elevated from 52,8% to 97,4% between 1991 and 2006. In 2016 the CS rate among term breech pregnacies was 97,7%. There were 57 (23.2%) vaginal deliveries vs. 189 (76.8%) caesarean section between 1991 and 2006 and 128 vs. 3 in 2016, respectively. We had significantly better results in the CS than in the VD group in terms of cord blood pH<7.2 and 5-min Apgar-score <7 (21% vs. 9.5% and 7% vs. 4.8%). The rate of admission to a neonatal intensive care unit (NICU) was higher in the VD group, but it did not reach the level of significance.

Conclusions: In the last 3 decades a significant elevation was observed in the CS rate among term-breech pregnancies from 50% to nearly 100%. The highest CS rate reached the top in 2006 and remained unchanged until know at our department. The explanation of this tendency may be explained several factors. It's a fact that the short-term neonatal outcome of singleton neonates in frank or complete breech presentation is significanty better among CS vs. VD group. These results correlate with the ones of Term Breech Trial Collaborative Group and verify the high rate of CS in case of breech presentation.

Keywords**:** breech presentation, perinatal outcome, caesarean section, vaginal delivery

Preterm infants in NICU Ljubljana comparison between maternal transport and neonatal transport outcome

Tomaž Križnar

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Objectives: To describe maternal in utero transport and neonatal transport and to present the scope of both transports in Slovenia. To analyze outcome of premature infants in both transports, and compare Slovene results with the Vermont Oxford international database.

Methods: Data were obtained from the Vermont Oxford International database (VON). We analyzed data of infants born at gestational age from the 22nd to 29th weeks. The VON does not specify infants after maternal transport, so we used categories “inborn infants” and “outborn infants” which are obtained in the VON. We believe that these two categories reliably reflect the difference between infants after maternal and neonatal transport. We analyzed mortality and main neonatal morbidities (respiratory distress – RDS, bronchopulmonary dysplasia – BPD, intraventricular haemorrhage – IVH, periventricular leucomalacia – PVL, rethinopathy of prematurity – ROP, necrotizing enterocolitis – NEC, persisten ductus arteriosus – PDA) between the group of ”inborns” compared to group of “outborns” and compared data for the Maternity hospital Ljubljana with the VON database.

Results:Inborns in NICU Ljubljana: mortality 6,7%, RDS 77,8%, BPD 17%, IVH 22,5%, PVL 3,2%, ROP 4,4%, NEC 2%, PDA 41%. Outborns in NICU Ljubljana: mortality 9,5%, RDS 95,6%, BPD 21,7%, IVH 47,8%, PVL 0%, ROP 8,7%, NEC 0%, PDA 73,9%. Iborns in VON database: mortality 9,6%, RDS 85,2%, BPD 32%, IVH 24,8%, ROP 38,1%, NEC 5,7%, PDA 45,3%. Outborns in VON database: mortality 16,3%, RDS 88,1%, BPD 36,5%, IVH 30,8%, ROP 42,6%, NEC 7,6%, PDA 55,1%.

Conclusions: Both in NICU Ljubljana and in the VON database, infants postnatally transported to NICU have higher mortality and morbidity comparing to inborns. We concluded that maternal in utero transport is still the best transport for newborn babies.
Differences between inborns and outborns in Ljubljana are higher comparing to the VON database. In Slovenia, we need to work on the improvement of the quality of postnatal neonatal transport and on the improvement of the primary care of newborns in the local maternity hospitals.

Keywords**:** maternal in utero transport, neonatal transport, mortality, morbidity

Cerebral oxygenation immediately after caesarean section and mode of maternal anaesthesia

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Objectives: The aim of the present study was to assess, if the type of maternal anesthesia during cesarean sections (spinal anesthesia vs. general anesthesia) has an influence on the immediate neonatal transition after birth.

Methods: For this observational study neonates born by cesarean section from November 2009 to September 2016 at the Medical University of Graz were eligible. Neonates were included, when they have been monitored during their first fifteen minutes after birth. Cerebral regional tissue oxygenation (crSO2) was measured by near-infrared spectroscopy (NIRS), peripheral arterial oxygen saturation (SpO2) and heartrate (HR) by pulse oximetry. Furthermore fractional tissue oxygen extraction (FTOE) was calculated out of crSO2 and SpO2. In addition umbilical arterial pH, APGAR-scores and respiratory support were recorded and analyzed.

Results: 54 preterm (32,0 ± 2,9 weeks of gestation) and 64 term neonates (38,8 ± 0,9 weeks of gestation) were included in the present study.
Term neonates: After maternal general anesthesia APGAR-scores at one, five and ten minutes were significantly lower (p=0,025; 0,044; 0,041) and there was also significantly more oropharyngeal suctioning (18 vs 4; p=0,001). crSO2 revealed no significant difference between the groups, although the infants in the spinal anesthesia group had a trend to higher initial values after birth. SpO2 was significantly higher at minute five, six and ten (p=0,018; 0,034; 0,029) and HR at minute seven, ten, eleven, twelve and fifteen. (p=0,035; 0,034; 0,050; 0,023; 0,008). There was no difference in FTOE between both groups. Infants in the general anesthesia group had significantly higher supplemental oxygen support at minute six, seven and eight (p=0,041; 0,021; 0,047).
Preterm neonates: There were significantly differences in APGAR-Score at one minute (p=0,024) and the umbilical arterial pH (p=0,008) between both groups. There were no significant differences in crSO2, SpO2, HR and FTOE. Supplemental oxygen support was significantly higher in the general anesthesia group from minute three to minute nine (p=0,023; 0,038; 0,044; 0,010; 0,046; 0,030; 0,032).

Conclusions: The present study demonstrates that the type of anesthesia has an influence on the immediate neonatal transition after birth. Neonates born with maternal general anesthesia during cesarean section need immediately after birth especially more medical support. Differences between general and spinal anesthesia group are more pronounced in term compared to preterm neonates.

Keywords**:** neonatal transition, cerebral tissue oxygen saturation, caesarean section, general anesthesia, spinal anesthesia

Neonatal outcomes of in utero transports to the Croatian Referral Perinatal Center

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Abstract was not received

Respiratory distress in term and preterm neonates

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Objectives: To determine the relation between the incidence of respiratory morbidity according to gestational weeks, mode of delivery and sex. Further to assess whether the timing of delivery between 37 and 41 weeks of gestation influences neonatal respiratory outcome.

Methods: Retrospective analysis was carried out at the Department of Obstetrics and Gynaecology, University of Szeged, Hungary between January 2012 and December 2012. All cases of respiratory distress syndrome (RDS), transient tachypnea of the newborn (TTN), meconium aspiration syndrome (MAS), apnea, persistent pulmonary hypertension of the newborn (PPHN), requiring admission to the neonatal intensive care unit due to respiratory distress were analyzed.

Results: During one-year period 2563 deliveries occured: within the 277 (10.8%) children born preterm the incidence of any kind respiratory morbidity was 57.8% while among term newborns it was 5.8%. The incidence of caesarean section (CS) were 65% and 40.4%, in preterms and terms, respectively. There were no significant differences neither in healthy nor in respiratory morbidity groups according to sex distribution. The incidence of RDS was 19.4% among preterms and 0.3% among terms. The incidence of TTN was 1.0%, apnea 0.3%, MAS 0.17% and PPHN 0.13% among term infants requiring NICU admission. The frequency of respiratory morbidity among term newborns was higher for the group delivered by CS (5.9%) compared with vaginal delivery (4.8%), but it did not reach the level of significance ($p=0.257$). Comparing the incidence of respiratory morbidity of term newborns delivered by CS between the 37-38 and 39-41 gestational weeks, a significant reduction was observed (11.2% vs 2.5%; $p<0.05$).

Conclusions: Significant reduction in neonatal respiratory morbidity would be obtained if elective caesarean section was performed after 38 weeks of pregnancy.

Keywords**:** Caesarian section, newborn, respiratory morbidity

Anaesthesia for caesarean section - Decision making

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Caesarean section is undertaken to improve maternal or fetal outcome or to reduce the anticipated complications from vaginal delivery. On the other hand, it is a major surgery with immediate maternal and perinatal risks.
Over the past two decades the soaring caesarean section rate in the developed countries has aroused debate of the best anaesthetic practice. The improvements of anaesthetic and surgical procedures and several findings of comprehensive audits has contributed to the improvement of national guidelines and can reduce the significant mortality or morbidity associated caesarean section. According to The Confidential Enquiry into Maternal and Child Health the direct deaths attributed to anaesthesia has dropped significantly since the mid 1980s.
Communication between members of the multidisciplinary team is mandatory to ensure optimal outcome, especially in case of urgency which will massively influence anaesthetic technique. Although it is reasonable to schedule an antenatal anaesthesiology consultation for patient at risk complication due to pre-existing conditions (ie. cardiac, pulmonary, neurologic disease, coagulation disorder).
Options for anaesthesia for caesarean delivery include neuroaxial (ie. spinal, epidural and combined spinal-epidural) and general. The choice of that technique is based on maternal and fetal status and risk-benefit balance must be considered, taking into account all factors relating to mother and fetus such as: degree of urgency of c-section, maternal preference, presence of effective working labour epidural, maternal coexisting medical conditions and airway considerations. Airway problems are more common in pregnancy than in general population due to anatomical and physiological changes during pregnancy. Moreover, pulmonary aspiration is one of the concerns of general anaesthesia. Hence the regional anaesthesia is safer and results less maternal and neonatal morbidity than general anaesthesia, should be offered woman who having caesarean section, if contraindication is not appear.

Are weight gain and BMI independent risk factors of operative delivery? Evidence from a multicenter prospective study

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Abstract was not received

Does third-trimester cervical length aid in predicting time of first stage of labor?

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Objectives: The aim of this study was to examine the association between third trimester cervical length (CL) measurement and duration of first stage of labor.

Methods: This prospective cohort study included women with a singleton pregnancy who had routine CL measurements taken by transvaginal ultrasonography between 37 and 39 weeks' gestation. Subjective duration of labor was defined as duration of contractions that the women subjectively had from the onset of regular contractions to full effacement of the cervix. Objective duration of labor was defined as 3cm cervical dilation independent of cervical effacement till full effacement of the cervix. Associations between variables were analyzed using nonparametric correlations coefficients. A model relating the duration of labor to predictors was built using linear regression.

Results: 129 women were included in this analysis. There was no significant correlation between cervical length and subjective duration of labor (ρ = -.037, p= 0.695). However, a reduction in cervical length increased the duration of objective duration of first stage of labor (ρ = -.269, p=0.013). On univariate analysis parity (p=0.018), hypertensive disorders (p=0.013) and induction of labor (p=0.022) were significantly associated with subjective duration of first stage of labor. On multivariate analysis, parity, hypertensive disorders and induction of labor remained significant.

Conclusions: In this study a long cervix was not found to be associated with length of first stage of labor. The cervix is obviously capable of making the changes during labor that are necessary for complete dilation independent of its length at the end of the third trimester.

Keywords: third-trimester cervical length, first stage of labor, transvaginal ultrasound, duration of labor

3-dimensional power Doppler ultrasound examination in pregnancies complicated by intrauterine growth restriction

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Objectives: Our goal was to examine placental vascularisation using 3-dimensional power Doppler (3-DPD) technique in the second and third trimester of pregnancies complicated by intrauterine growth restriction (IUGR).

Methods: Vascularisation of placentas was assessed in the second and third trimester of 52 pregnancies complicated by IUGR as well as 171 normal pregnancies using 3-DPD technique. We have evaluated the correlation between specific parameters and gravidity, parity, body-mass index, placental localisation, estimated fetal weight, birth weight, emerging intrauterine complications, umbilical cord arterial pH and Apgar score. We applied the Merce-type sonobiopsy and volumes were analyzed with Virtual Organ Computer-aided Analysis (VOCAL) programme.

Results: 3-DPD vascularisation indices of the placenta showed significant differences between the study group and control group. Placental vascularisation is lower in pregnancies complicated by IUGR than in normal ones. Deterioration of the vascularisation correlates to perinatal outcome.

Conclusions: A significant reduction in placental 3-DPD indices could be measured in pregnancies complicated by IUGR applying the 3-D sonobiopsy, which is a valid alternative for evaluation of the placental vascular tree.

Keywords: 3-dimensional power Doppler ultrasound, intrauterine growth restriction, perinatal outcome, VOCAL

Screening and prevention of cytomegalovirus infection during pregnancy - prospective study

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Introduction: The CMV infection is one of the most important and most frequent congenital infection in developed countries.1% of all newborns are affected, and in 10% of them will develope lesion of the central nervous system, blindless or deafness. Around 5-10% of the symptomless newborns will have late onset type of auditory lesion. In case of primary CMV infection during pregnancy can lead to bigger chance for congenital lesions. CMV screening among pregnant women is vexed in most european countries, partly because our knowledge is incomplete about the nature of CMV infection, the epidemiology of the infection, and our possibilities are limited in treatment during pregnancy. In case of laboratory IgM tests fals positivity is high, and there is a chance for reinfection/reactivation in pregnancy.

Objectives: We plan the prospective anti-CMV IgG/ anti-CMV IgM serology examination of 5-700 first trimester pregnant women to screen for CMV infection in this population.

Methods: The examinations are made of maternal serum, by using enzyme immunoassay (EIA) for the demonstration of special virus antibodies. Those patients who are seronegative in the first trimester, will be checked in every two month. In seropositive cases anti-CMV IgG avidity examination is the next step to search for primer CMV infection. In proven CMV infection close follow-up will be offered for the patient (ultrasound, genetical consultancy, molecular examination in case of TA-AC). After the birth within two weeks we make a molecular examination from the newborn's blood and urine in order to prove/exclude congenital CMV infection. For the collection of epidemiologic datas, the patients fill a questionarie.

Results: We have already involved more than 1000 patients in this study. Our experience with the patient compliance is really good. Most of the patient judged their information poor about the possibble effects of cytomegalovirus infect infection during pregnancy. We got huge differences, if we compared this information with the effect of toxoplasma infection during pregnancy. Most patients informed us that they didn't get any information about the effects of cytomegalovirus infection during pregnancy even not from gynecologists nor midwifes.

Conclusions: Now, we would like to present our new datas in this field, we collected until our last meeting in Zagreb.

Keywords**:** cytomegalovirus, pregnancy

Prenatal ultrasound alterations in cystic fibrosis

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Objective: Cystic fibrosis is a complex disorder of membrane transport in epithelial cells due to mutations in the CFTR gene. The viscous discharge is responsible for respiratory symptoms, pancreatic insufficiency and other organ dysfunctions. The time of the diagnosis is crucial for the prognosis. Prenatal molecular genetic testing is available and ultrasound scan offers real alternative with more and more opportunities. On ultrasound image, due to the production of dense mucus plugs in the small intestine of the fetus increased echogenicity of the bowels, ascites and polyhydramnios may develop and ratio of head circumference to abdominal circumference (HC/AC) may decrease.

Methods: During pregnancy care the sonographic findings of mothers of patients with cystic fibrosis were assessed, focusing on abnormalities which may be suggestive of CF, such as increased intestinal echogenicity, decreased HC/AC, polyhydramnios and their time of appearance. We determined the estimated fetal weight based on the formula B of Hadlock, the HC/CA ratio, as well as their change during pregnancy.

Results: Either sonographic finding indicative of CF could be first monitored at week 32 on average. The mean fetal weight percentile calculated on the basis of estimated fetal weight was 50% at week 28 and the HC/AC ratio 70% at week 20. These values were decreased significantly ($p<0.05$) by the end of gestation.

Conclusions: Increased intestinal echogenicity, polyhydramnios, ascites and HC/AC ratio may refer to CF already in the prenatal life. Since sonographic findings develop in the third trimester, it is essential to follow these alterations in addition to the routine screening, especially in case of positive family history for CF.

Keywords**:** cystic fibrosis, prenatal diagnosis, ultrasonographic alterations

Psychological support for parents who lost a child during pregnancy or soon after birth

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Objectives: The aim of this paper is to address the grief process of parents who lost a child during pregnancy or soon after birth. The loss of a child during pregnancy or soon after birth is the death of a newborn, stillbirth, miscarriage or induced abortion for fetal abnormality. This paper identifies the need for adequate psychological support for parents who lost a child during pregnancy or soon after birth. This loss is recognised as one of the most stressful live events which has lifelong consequences for the parents and whole family. A very painful grieving process begins after the death of a newborn, stillbirth, miscarriage or induced abortion for fetal abnormality, and includes different feelings like shame, quilt, anger, sadness, hopeless, disappointment, despair, anxiety, and so on. Loss related pain is also shown in different physical symptoms like fatigue, nausea, aches, and insomnia. Factors which have been reported to increase the risk of adverse psychological outcomes include the lack of social support or perceived inadequate social support, circumstances of the loss, past experiences, the way individuals deal with life problems, relationship with their partner, and perceived support from health workers. Psychological support is one of the factors and plays a very important role in how bereaved parents experience their loss. Psychological support can include offering counselling services on how to say goodbye and create memories, how to deal with feelings, how to communicate with siblings, other family members and friends, how to return to work, and about future pregnancies. By offering psychological support we can decrease the risk of adverse psychological outcomes and other problems related to mental health.

Conclusions: The role of psychological support is very important. Skilled, sensitive and caring treatment positively impacts the grief experience of the bereaved parents. Psychological support or counselling, or both, has been suggested to improve outcomes for families after a perinatal loss. Alongside psychological support it is very important to work as a team, which includes doctors, midwives, nurses, psychologist, and so on. It is also important that people have access to support both during and after hospitalization.

Keywords**:** psychological support, perinatal loss, grief process, teamwork

Depression screening and psychological intervention in pregnancy care and their impact on complications during pregnancy

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Objectives: According to the literature, up to 20 percent of women experience perinatal depression, which can lead to perinatal complications if women do not get professional help. To identify women with depressive symptoms the psychologist of the Obstetrical and Gynecological Clinic of Szeged introduced the perinatal depression screening program in April 2011, which has become part of pregnancy care since then. In the study our aim was to assess if depressive symptoms and psychological intervention had any relation to perinatal complications.

Methods: Perinatal nurses informed women of the depression screening program at their first pregnancy care session. The nurses collected the informed consent and demographic data, and then the participating women filled in the Edinburgh Postnatal Depression Scale screening tool once in every trimester and once in postpartum period. When a pathological score obtained, psychological intervention was offered as part of the screening. In all 4614 women took part in the screening program, from this sample we collected 2178 participants' obstetric data and 188 women asked for psychological intervention.

Results: The statistical analysis revealed that higher depressive scores were related to low birthweight, intrauterine growth restriction, preeclampsia, and tendency was observable between scores and protracted cervical dilatation, protracted descent, gestational diabetes and being overweight. The mean depressive scores of women who had taken part in psychological intervention were higher in all trimesters; these differences were mostly significant depending on when they started their sessions. The depressive scores of women who had taken part in the intervention decreased significantly after the consultations and these women were significantly less likely to have cesarean section.

Conclusions: Women who are more likely to develop perinatal complications can be identified with a rapid screening and providing psychological intervention to them can be a way to help preventing negative outcomes.

Keywords**:** pregnancy care; depressive symptoms; pregnancy outcomes; psychological support

Indices of reduced adaptability of cardiovascular function after pregnancy

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Objectives: Pregnancy complications, especially preeclampsia and other hypertensive disorders, are regarded as indicators of a heightened risk of cardiovascular disease (CVD) in the later course of life. The present study aimed to identify early markers of dysfunction by investigating cardiovascular dynamics in a post-partum setting. Changes of the heart rate (HR) and blood pressure (BP) have proven as a useful method to display adaptation of the cardiovascular system. By application of a mild cognitive stress task, embedded in a standardized study protocol, cardiovascular reactivity and recovery was studied in detail to identify maladaptation and/or pathology after pregnancy.

Methods: A total of 96 women, 24 following preeclampsia and 36 after uncomplicated pregnancy (16 weeks postpartum), was enrolled in the study and compared to 36 age-matched healthy women without previous pregnancy. Dynamic changes were induced by a self-relevant stress instruction to a cognitive task and analyzed for periods of rest, anticipation of the task and recovery. High-resolution electrocardiogram and non-invasive continuous blood pressure were simultaneously recorded throughout the study protocol. Changes of HR, systolic and diastolic BP (ΔHR, ΔsBP and ΔdBP) were analyzed by repeated measures mixed model AN(C)OVA and respective post-hoc procedures.

Results: Analyses revealed significant differences of ΔHR and ΔBP between women with preeclampsia, healthy pregnant and non-pregnant women (p=.000). The expected stress related HR acceleration to the announcement of the task (reactivity) followed by a deceleration to almost baseline measures after task termination (recovery) was observed in non-pregnant women only. Previously pregnant women in contrast showed an inversed trend. After a blunted first response, ΔHR decrease was not only missing, there was even a further increase during recovery. Similar results were obtained with respect to ΔsBP and ΔdBP.

Conclusions: Sixteen weeks postpartum dynamic changes of heart rate and blood pressure are still affected, as displayed by a blunted response to and a lack of recovery from a stressor, indicating maladaptation of the cardiovascular stress response system. Prolongation of the physiological stress response as shown by the present data might be indicative for the heightened vulnerability in the postpartum and the increased risk of CVD in preeclampsia. Further research in the course of the postpartum is necessary to discover group differences and/or return to normal patterns.

Keywords**:** cardiovascular adaptation, heart rate reactivity, heart rate recovery

Preoperative autologous blood donation in patients with placenta previa – costly overtreatment or good clinical practice

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Objectives: The aim of this review was to analyze the benefits and drawbacks of clinical use of preoperative autologous blood donation (PAD) in pregnant women with placenta previa. In recent years, PAD has attracted more attention and has been widely used in treatments for surgical bleeding. However, the use of PAD in obstetrics has been questioned and many believe that there is no evidence to support its use in planned cesarean in pregnancies with placenta previa.

Methods: We reviewed articles published on this subject and compared them with our retrospective study in which we evaluated the use of PAD in pregnant women with placenta previa in a tertiary care maternity hospital in Ljubljana, over the 5-year period from 2011 to 2015.

Results: PAD has many advantages such as avoiding allergies, hemocytolysis, immunosuppression and other adverse reactions. Based on the findings of our study it does not induce anemia by the donation and it is suitable for most of pregnant women. An additional benefit is the stimulation of erythropoiesis by repeated phlebotomies. However, the autologous blood is more expensive than allogenic blood, especially discarded units that were not transfused. There is also the potential for complications such as infection and hemolysis of donated blood and more liberal transfusion policy. As found in our study it is justified for approximately one quarter of all appropriate candidates.

Conclusions: Although our study shows that PAD is not justified for all pregnant women with placenta previa, it still has its prospects of clinical application. Especially because of its many clinical benefits. However, due to its cost-benefit limitations, we should find risk factors for increased surgical bleeding to decrease inappropriate utilization of PAD and to reduce the number of discarded units.

Keywords**:** placenta previa, autotransfusion, usability, cost effectiveness

An atypical presentation of postpartum ovarian vein and inferior vena cava thrombosis in a 37-year old multipara

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A 37-year old multipara presented to our department 14 days after an uneventful vaginal delivery with fever and mild lower back pain, which radiated into the right gluteal region and thigh. Blood tests showed leucocytosis with neutrophilia, elevated C-reactive protein (CRP) 100 mg/L, and mild thrombocytosis. Initial gynaecological ultrasound was normal. Despite the empirical intravenous antibiotic therapy, the CRP rose to 147 mg/L in the next 3 days. Abdominal ultrasound was performed and it showed a thick liquid mass behind inferior vena cava (IVC) that spread caudally. Next, an abdominal computed tomography (CT) was preformed and the diagnosis of right ovarian vein (OV), both iliac veins and IVC thrombosis was established. The patient was put on low-molecular-weight heparin with further continuation of antibiotic therapy. Studies for underlying thrombophilia were negative. Over the next 14 days, the pain subsided and the CRP normalised. She was discharged with oral anticoagulants and remained under the control of cardiologist.
Postpartum ovarian vein thrombosis (PP OVT) occurs in approximately 0.05%-0.18% of live-birth pregnancies and is defined as an occurrence of an intraluminal thrombus in the OV. Risk factors include 3rd-4th decade of life, multiparity, obesity, smoking, endometritis, caesarean section, and thrombophilia. It usually presents with high fever, chills, nausea, vomiting, leucocytosis, and right lower quadrant abdominal pain that can radiate to flank or groin. An atypical lower back pain that radiates into thighs has been described in a few cases. Pathologically, it is characterized by inflammation and thrombosis of one or both OV. It is usually right sided. Diagnosis is established by ultrasound, CT or MR imaging. Studies for underlying coagulopathies also have to be performed. The most serious complications are sepsis, extension of thrombus into IVC, and septic thromboembolism and the overall mortality rate is 4-5%. The mainstay of therapy are antibiotics for 2 weeks and anticoagulants for 3-6 moths or until the resolution of a thrombus. Surgical intervention is rarely needed. With this case, we would like to raise awareness of this rare and potentially fatal condition, which requires a high index of suspicion in order to obtain the right diagnosis.

Keywords**:** ovarian vein thrombosis, postpartum period, puerperal complications

Pregnancy complications: challenge and/or chance for further cardiovascular risk in later life?

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Objectives: Preeclampsia is one of the leading causes of maternal and perinatal mortality and morbidity, preterm birth, and fetal growth restriction. Furthermore, preeclampsia also significantly and sustainably affects the cardiovascular long-term morbidity of the mothers and their offspring. Nevertheless, given the importance of cardiovascular health on an individual basis as well as for the health care costs, studies linking cardiovascular disease prevention with preeclampsia have played a subordinate role in current research so far. The issue that is perhaps most relevant for future developments is that the huge physiological adaptations during pregnancy as well as the related tremendous changes of personal circumstances constitute a severe "stress test" for the mother-to-be.

Methods: Women with a history of preeclampsia have a 4-fold higher risk of chronic hypertension and a 3-fold higher risk of type 2 diabetes mellitus in later life. Therefore, we propose that the relationship of pregnancy complicated by preeclampsia and the future cardiovascular risk might in general be a chance for the implementation of primary prevention strategies. Based on this reasoning, in the current study the participants with/without pregnancy complication were exposed to a self-relevant psychological stressor postpartum, and several hormones, endothelial characteristics and functions, hemodynamic and autonomous nervous system variables were analyzed and possible moderating factors were investigated.

Results: Blunted cardiac reactivity, which results from chronic stress, was shown in women with a history of preeclampsia in response to the stressor in the standardized study protocol carried out postpartum. The preliminary results indicate that, several months after childbirth, a history of preeclampsia might be associated with difficulties in mounting appropriately-sized cardiac responses to acute challenge, thereby impairing the ability to dynamically adapt to environmental challenges. Thus, particularly if the system is already affected by chronic stress, a history of preeclampsia could add to the adverse development.

Conclusions: The results could be an important indicator for counselling the concerned women about their risk and the benefits of modifying their lifestyle. Therefore, we propose a continuing monitoring of cardiovascular risk factors with a standardized study protocol in women with a history of preeclampsia.

Keywords**:** Preeclampsia; continuous monitoring; blunted cardiac reactivity; standardized study

Pathologic placentation in pregnancies: diagnostic criteria and recommendations for management

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Objectives: The talk presents current up-to-date diagnostic criteria for the detection of pathologic placentation and provides management approaches in order to reduce the risk of severe morbidity and mortality both for the fetus but mostly for the mother.

Methods: Review of current literature summarised in a free communication

Results: Pathologic placentation is still one of the major causes of maternal morbidity ans also of mortality.
Current obstetric practice greatly contributes to increase the risk of these risk factors after not taking in consideration the long-term consequences.

Conclusions: We take many things in life for granted. One of these is the placenta, which all mammals have during their gestation. This wonderful organ bridges the gap between the outside world and the intrauterine surroundings for the developing embryo. Due to it's unique structure and the special immunological status of the pregnant woman it has a very well defined life cycle. In some cases however, it goes through a pathologic placentation and it is part of a complex condition leading to a life threatening condition for the pregnant woman or even for the fetus. Often medical actions previously considered as unquestionable contribute to further complicate the situation.
Pathologic placentation rarely occurs without prior risk factors. Most of these are iatrogenic.
The talk presents current up-to-date diagnostic criteria for the detection of pathologic placentation and provides management approaches in order to reduce the risk of severe morbidity and mortality both for the fetus but mostly for the mother.

Keywords**:** Placentation, pathology

Acute promyelocitic leucemia in pregnancy: a case report

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Objectives: We aimed to present a case of acute promyelocitic leucemia in the second trimester of pregnancy and to study the available literature on this rare condition.

Methods: We did a retrospective review of the case. A review of literature was performed using Pubmed.

Results: A 35 year old woman (G3P1) in the 13th week of pregnancy was admitted to the department of hematology because of diffuse mucocutaneus bleeding. The clinical picture was highly suspicious for acute promyeloctic leucemia, therefore a regime of all trans retinoic acid and platelet transfusion was started immediately. A bone marrow biopsy confirmed the diagnosis so she received chemotherapy. Idarubicine was the treatment of choice. Due to the pregnancy she got no antibiotic or antimicotic prophylaxis. Inflammation markers and fungal antigenes repeatedly tested negative, she was afebrile. On day 20 she showed first signs of bone marrow recovery. During her hospital stay two ultrasound controls were perfomed, which showed normal fetal development. She was dischared after 25 days and came to follow-up with the haematologist and the obstetrician. She stayed in remission throught the pregnancy and fetal growth was appropriate as well. She gave birth at term by a cesarean section due to an obstetric indication. A baby girl with birth weight 4070 g was delivered with Apgar scores 9/9 who showed no signs of retinoic acid-induced heart defects. Nine months after birth the baby thrived well.

Conclusions: Our results are in concordance with case reports we studied. There is a high remission rate in pregnant women with APL who are treated accordingly. The disease and its treatment however can cause severe complications. The disease and its treatment however can cause severe complications so its important that these patients are managed by a multidisciplinary team who can provide all the necessary knowledge and information.

Keywords**:** acute promyelocitic leucemia, cancer in pregnancy, all-trans retinoic acid

Biomarkers (sFlt-1/PlGF)- their dynamics in the course of preeclamptic pregnancies and fetal and maternal outcomes

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Objectives: Since pre-eclampsia still remains one of the most threatening complications for mother and fetus in pregnancy, it is of particular interest to find any reliable parameter to identify women at risk for preeclampsia timely to prevent severe neonatal morbidity and mortality. The new biomarkers soluble fms-like tyrosine kinase-1 (sFlt-1) and placental growth factor (PlGF) and its ratio promise to be a new solid marker in the identification of women with preeclampsia. However the course of the ratio and the dynamic of its progression until and above its critical values, as mentioned in the literature, is not yet tested sufficiently.

Methods: We conducted a retrospective analysis on the course of the biomarker ratio in singleton pregnancies in the years from 2012 until 2016 at the department of obstetrics at the Medical University of Graz. The study cohort comprised 39 women, who developed a biomarker ratio at the critical value above 85 and delivery until GA 34+0.

Results: Most of the patients showed a continuous increase in the ratio until delivery. However some of them showed a stable progress during several days towards delivery. Two of the patients developed a pulmonary edema, two an embolism and a disseminated intravascular coagulation. Three patients had to be transferred to the intensive care unit. There were no other severe complications, such as placental abruption or intrauterine fetal death.

Conclusions: Our results confirm the common data that an elevated ratio is a marker for timely delivery. Interestingly, the data show that the ratio is not obligatory constantly raising, if it has once reached the critical value, but can be stable or just slightly increasing over some days. Moreover the data show that an elevated ratio is not associated with preeclampsia only, but also with other placenta-associated diseases, like IUGR.

Keywords**:** preeclampsia- biomarkers- maternal and fetal outcome

Association of preeclampsia and auto-antibodies

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Objectives: Preeclampsia is a pregnancy-specific multiorgan disorder, complicating 3-5 % of all pregnancies. Despite advances in feto-maternal management, preeclampsia is still a major cause of maternal and neonatal morbidity and mortality worldwide, especially in developing countries. Several autoimmune diseases such as systemic lupus erythematosus (SLE) and antiphospholipid syndrome (APS) are known to be associated with the development of preeclampsia. Recent investigations have revealed an impact of previously unrecognized systemic rheumatic diseases on the incidence of preeclampsia.

Methods: 182 women with a history of preeclampsia were included in the study. None of these women had a known autoimmune disease or a hereditary thrombophilia. Several auto-antibodies (Anti-nuclear/ANA, anti-Rho, anti-La, anti-double stranded DNA/anti-dsDNA, anti-mitochondrial/AMA, anti-cytoplasmatic and antiphopholipid antibodes/aPl) were determined 8 weeks post partum. Additionally a full thrombophilia screening has been performed. Measurements were repeated after 3 months when positive.

Results: 33% of all women with a history of preeclampsia showed at least one auto-antibody at two different measurements. ANA at titers > 1:80 were detected in 24% of women. 3 women (1.6%) showed increased titers of anti-mitochondrial Antibodies (AMA) and anti-cytoplasmatic antibodies. 22% of women presented a mutation of Methylenetetrahydrofolate reductase (MTHFR). Faktor V-Leiden Mutation could be detected in 3.2% of cases. Antiphospholipid antibodies could be revelaed (twice) in 13 women (7%). A Prothrombin-II-Mutation was found in 3.2%. 37% of women had a negative thrombophilia screening and did not show any increased titers of auto-antibodies.

Conclusions: It seems that the presence of especially ANA might be associated with preeclampsia, which is in accoordance with literature. However, our results did not show an association of thrombophilia and preeclampsia. A detailed post partum screening for risk factors for the development of preeclampsia including auto-antibodies and thrombopliia might optimize the management for the follfowing pregnancies and improve the obstetric outcome.
We were able to detect and to diagnose an Antiphospholipid Syndrome in 13 women; 3 women with positive titers of anti-mitochondrial and anti-cytoplasmatic antibodies were presented at the hepatology department in order to exclude primary biliary cirrhos

Keywords**:** pregnancy- preeclampsia- autoimmune diseases- thrombophilia

Cerebral oxygenation immediately after birth and outcome/mortality of preterm neonates

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Objectives: Monitoring cerebral regional oxygen saturation (crSO2) using near-infrared spectroscopy (NIRS) during immediate transition is feasible. It has already been demonstrated that crSO2 during immediate transition has an impact on short term neurological outcome. Long-term neurological outcome can be assessed with the BSID II (Bayley Scales of infant development II) at the corrected age of two years. Aim of the present study was to investigate, if crSO2 during immediate transition is associated with mortality and long-term neurological outcome in preterm neonates.

Methods: Preterm neonates were included in this observational study, if they have been monitored with NIRS during the first 15 minutes after birth and in surviving neonates long term outcome assessment has been performed. In addition to NIRS heart rate (HR) and arterial oxygen saturation (SpO2) have been recorded. In the surviving neonates long term neurological outcome has been assessed at a corrected age of two years by clinical assessment or if applicable by BSID II. Two groups were defined: i) adverse outcome group: neonates who died or had an adverse neurological long term outcome, ii) good outcome group: neonates, who survived without impaired long term neurological outcome. crSO2 values of both groups at each minute during the first 15 minutes after birth were compared.

Results: 23 neonates were included in the present study: 16 preterm neonates in the good-outcome group and 7 in the adverse-outcome group. In the adverse outcome group two neonates died and five had an impaired long term neurological outcome.
Despite significant different gestational age and birth weight (gestational age: 30±2 vs 26 ±3 weeks of gestation, birth weight: 1266±440 vs 760±190; $p<0.05$) SpO2 and HR did not differ between both groups; however, crSO2 was significantly lower in the adverse-outcome group at minute five, seven, and ten compared to the good outcome group.

Conclusions: Cerebral regional oxygen saturation during immediate transition was lower in neonates with adverse long term outcome defined by mortality and neurological assessment at two years corrected age.

Keywords**:** cerebral oxygenation, immediate transition, long term outcome

Does the birth mode have an influence on the active ear acupuncture points in neonates?

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Objectives: All body organs are represented as reflex zones on the outer ear, so called ear acupuncture points. Active points can be present and detectable during disease and therefore, can be used in diagnostic and therapeutic concepts in adults. Previous trials have shown that these points are detectable in neonates as well. Nevertheless, there is only little known about active ear acupuncture points in neonates yet. Therefore, this blinded, prospective, observational study was conducted to locate active ear acupuncture points in healthy and sick neonates and to investigate the influence of birth mode on number of active ear points.

Methods: Ear acupuncture points were detected on both ears by an electrical point search device (PS3© by Silberbauer, Vienna, Austria). At time of investigation, all neonates were in stable condition. The examination took place in the same investigation room in all neonates. Therefore, the investigator was blinded due to history of the neonates, e.g. diagnosis or birth mode. Neonates born spontaneously, by caesarean section and by vacuum extraction were compared. We used Mann-Whitney-U Test and Spearman Correlation for statistical analysis.

Results: We included 63 term and late-preterm neonates born after the 34th gestational week (33 male and 30 female, 37 sick and 26 healthy). In total, 31 neonates were born spontaneously, 23 by caesarean delivery and 8 by vacuum extraction. There were no significant differences in active ear acupuncture points between neonates in regard to birth mode. Additionally, there were no differences in active ear acupuncture points between preterm and term neonates.

Conclusions: The present study demonstrated that mode of delivery has no influence on activity of ear acupuncture points.

Keywords**:** neonate, preterm, term, birth mode, caesarean section, vacuum extraction, spontaneous delivery, ear acupuncture points

The forgotten majority - the outcome of moderately to late preterm infants during the first 3 years of life

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Objectives: The group of moderate to late preterm infants is unfairly forgotten, however they number about 75% of all preterm babies.
The aim of our study was to compare the reason and the frequency of hospitalisation in the neonatal period and the rehospitalisation in the first three years of life among the extremely and very preterm (EVPT), moderate to late preterm (MLPT) and term (T) neonates admitted to our NICU with putting greater emphasis on the 2nd group. Furthermore, we were looking for relationships between morbidities occured in neonatal period and later on.

Methods: In our retrospective study those babies were included, who were admitted directly after birth to our NICU of Paediatric Department of University of Szeged, born between 1st of Jan 2006 and 31st of Dec 2010, and according to their address were expectedly to be later hospitalized in our Department. Their data were extracted from electronical medical records used in our Department. For statistical calculations (Chi-Square, Fischer's exact tests) used for evaluation of our results, SSPS programe was applied.

Results: In the above mentioned 5 years 3 239 patients were treated in our unit and 571 of them met our eligibility criteria. 120 patients (21%) belonged to the EVPT group, 248 (43.4%) to the MLPT, and 203 (35.6%) to the T group. The MLPT infants experienced morbidities (eg. jaundice, hypoglycemia and respiratory distress syndrome) similar to EVPT infants, although at lower rates. 65.5% of the survived patients was readmitted in first three years in the following distribution: EVPT 51.6%, MLPT 60%, T 64.5%. The short-term readmission rate (the first two weeks) after birth hospitalization was very low in both groups. In the case of the late-term readmissions (3rd week-end of the 3rd year) respiratory diseases (upper and lower respiratory tract infections, obstructive bronchitis) were the most common causes. The rate of wheeze was higher in EVPT and MLPT compared to group T, however in the first two groups was decreasing over the years, while in the latter it was constant. We didn't find any significant relationship between respiratory morbidities from neonatal period and those ocurred in first three years of life.

Conclusions: MLPT infants are physiologically and metabolically less mature than term infants. Thus, they are at higher risk of morbidity and mortality than the term babies in the neonatal period and in early childhood too. They should deserve as careful follow up as their very preterm counterparts.

Keywords**:** moderately to late preterm, morbidity, jaundice, hypoglycaemia, wheeze, readmission

Pathologic alterations of the umbilical cord and placenta in IUGR -etiology of IUGR or 'fetal response'

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Objectives: The placental microvasculature is essential for the sufficient transfer of gases, nutrients and metabolites between the mother and the fetus. The size, weight and shape of the placenta show wide variations and are related to its ability to transfer nutrients. Our aim was to investigate the fetal compensatory mechanisms in reduced placental circulation in IUGR.

Methods: In the 20-24th weeks of pregnancy fetal ultrasound biometry was used to assess estimated fetal weight by the formula B of Hadlock. A conventional color Doppler study of the umbilical arteries was performed to asess the S/D ratio. After delivery the weight of the neonate and placental volume were measured and the tissue was stored in formaline. After 3-7 days formaline fixation, placental weight and volume were measured and gross examination of the placenta and the umbilical cord was executed according to the Guideline of Royal College of Pathologists, 2011. Histologic samples were taken from the placental end of the cord.

Results: Gross pathological examination revealed that placental volume measured right after delivery shows the strongest correlation with birthweight rather than placental weight or volume after formaline fixation. Although the prevalence of star-shaped lumen in one or both umbilical arteries did not differ in the IUGR or control cases, it does show connection with vessel wall thickness. The lumen cross sectional area shows mild correlation with birthweight (r=0.336). We found nonconversion of maternal arteries in the placenta that is similar to that of the uterine arteries seen via ultrasound as end diastolic stop of blood flow (notch).

Conclusions: Our results can confirm that mild histopathologic alterations might be present in normal pregnancies, until there is enough functional placental tissue, the sufficient fetal nutrition can be maintained. This compensatory residual of the placenta becomes insufficient when two or more pathologies are present, that is characteristic for IUGR cases. The correlation of umbilical artery lumen cross sectional area and neonatal weight and the relationship between vessel wall thickness and lumen shape in umbilical arteries suggests these alterations in umbilical arteries are part of a fetal response to undernutrirtion rather than of IUGR etiology. Further studies are needed to establish a diagnostic method involving similar findings of umbilical artery pathology and fnctioning placental tissue ratio to increase the accuracy of predicting fetal outcome.

Keywords**:** intrauterine growth restriction, placental insufficiency, placental histopathology, fetoplacental circulation

Pharmacodynamic studies of placental and umbilical vessels

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Objectives: the fetoplacental circulation. The reduced, absent or reverse end diastolic flow can be measured via ultrasound and indicates placental insufficiency. To better understand the change in placental and umbilical blood flow we performed pharmacodynamic measurements on these vessels.

Methods: Right after delivery the placenta and the umbilical cord were placed into Krebs-Henseleit solution (118 mM NaCl; 4.7 mM KCl; 1.2 mM KH2PO4; 1.2 mM MgSO4.7H2O; 2.5 mM CaCl2 2H2O; 25 mM NaHCO3, 11.7 mM dextrose), pH 7.4 and stored at 4oC. The samples were processed within 24 hours to ensure tissue viability. At the placental insertion a 5 cm long segments of the umbilical cord was used to examine umbilical vessels that were dissected from Wharton's jelly and cut into 3-5 mm long rings. The placental vessels were prepared from its edge with the help of a rat central venous cannula. Each vessel rings were within 3-5 mm long. They were suspended on stainless steel hooks and placed in a tissue bath containing a Krebs-Henseleit solution at 37°C, bubbled with carbogen (95% O2, 5% CO2) and exposed to 2g initial tension. During a sixty-minute equilibration time we washed the system throughout with fresh solution every 15 minutes, and the spontaneous basal tone of the vessels developed. Vasoconstrictors and relaxants were added in a cumulative logarithmic pattern (10-9M-10-5M). 6 minutes elapsed between the administration of the doses. The change in the vascular tone was detected by isometric sensors and recorded and analyzed by ISOSYS S.P.E.L. advanced computer software (Experimetria Ltd, Budapest, Hungary).

Results:Each vessel ring was viable and responsive. The results are dose-effect curves that can be interpreted as the percentage of the basal, spontaneous vascular tone represented as 100% in value. This method is proven to be reproducible and applying the same protocol for every vasoactive agent not only case-control studies can be evaluated but the effects of different agents are comparable too.

Conclusions: This experimental method is reproducible and valid for both case-control studies and comparing the effect of different vasoactive agents. With experiment Combined with antagonists, the receptor spectrum of these vessels could be discovered. Although these results are not as accurate as receptor PCR would be, it is much cheaper and reliable enough to pretest the possible targets for PCR.

Keywords**:** intrauterine growth restriction, pharmacokinetics, placental insufficiency, tissue bath experiment

Maternal, fetal and neonatal mortality in "the Alpe Adria countries"

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Introduction: In this article author present the data on maternal, fetal, early neonatal and perinatal mortality in the states of Austria, Slovenia, Croatia and Hungary ("Alpe Adria countries") from 2011 to 2014 years.

Objectives: Description of perinatal health care quality assessment key indicators in "the Alpe Adria countries".

Methods: Retrospective review of the reports from "the Alpe Adria countries" from 2011 to 2014. The data were downloaded from EU WHO and are presented in the tables and graphically for simpler comparisons

Results: Austria and Croatia had the lowest ratio of fetal mortality (3.3‰ in Austria; 3.5‰ in Croatia), the highest fetal mortality ratio had Slovenia and Hungary (4.3‰ Slovenia and 4.6‰ Hungary) in 2014. In Austria, fetal mortality did not change from 2011 to 2014. Early neonatal mortality ratio was the lowest in Slovenia and Austria during period 2011 to 2014. Significant decline of neonatal mortality was recorded by Hungary (from 2.2‰ in 2011 to 1.8‰ in 2014), while Croatia had the highest neonatal mortality when compared with Austria, Slovenia and Hungary. Slovenia and Austria had the lowest perinatal mortality. Hungary had the highest maternal mortality ratio when compared with Austria Italy and Croatia. The maternal mortality ratio (MMR) in Austria has increased significantly from 2012 (1.3/100,000 live birth) to 2014 (8.6/100,000 live birth), while the Republic of Croatia follows a significant reduction in the MMR. Through this time period, the MMR in the Alpe Adria countries varied from 10.2/100,000 to 1.3/100,000 live births. The caesarean deliveries showed steep increase from 19.1% in Croatia to 36.3% in Hungary in 2014.

Conclusions: According to the analyzed data "the Alpe Adria countries" have excellent indicators of perinatal health.

Maternal, fetal and neonatal mortality. Neonatological aspects

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Mortality rates in the neonatal period are used to evaluate the outcome of pregnancy and monitor the quality of perinatal (prenatal and neonatal) care.
Comparison of mortality rates across states or countries is difficult because different definitions are often used. Furthermore there are regional differences in the level of perinatal care, different availability of prenatal diagnosis and pregnancy termination facilities, and different societal acceptance of termination of anomalous pregnancies.
Neonatal mortality rates (NMR) are almost 10 times greater in countries with moderate and low income than in high-income countries.
In most of high-income countries, the perinatal mortality rate declined in early 2000s and has remained stable in the following years. Neonatal mortality rates are higher in infants of some racial groups, preterm, or a product of a multifetal pregnancy.
The majority of infant deaths are attributed to congenital malformations or chromosome abnormalities, low birth weight or prematurity, sudden infant death syndrome, maternal complications, unintentional injuries, and complications of the placenta, cord, or membranes.

Monitoring maternal mortality in Slovenia: Results and response

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Objectives: Maternal mortality is considered to be one of the major indicators of the health system performance. It reflects accessibility and quality of prenatal and obstetric care as well as the health status of reproductive-aged women. Maternal deaths often remain unrecognized in national health statistics, mainly due to the lack of relevant data and inconsistent use of the guidelines for death certification, leading to misclassification and underreporting. Therefore, active case finding is necessary and many countries use confidential enquiries to assess the real number of cases.

Methods: In Slovenia maternal deaths are not specifically notifiable, but other methods to identify them and avoid underestimation are used. Multidisciplinary working group for maternal mortality investigation was established at the National Institute of Public Health. Members were appointed by Board of obstetricians and gynecologists. Identification of pregnancy-associated deaths is based on the vital statistics data, with manual revision of death certificates and the computer-based linkage of databases. All identified cases are analyzed, investigation includes gathering medical documentation from all health care providers of deceased women. The group than conducts systematic review of the information, considers the relationship to pregnancy and factors of avoidability and makes recommendations for health sector and community actions.

Results: In the period 2000-2014 29 maternal deaths and 19 late maternal deaths were identified. Maternal mortality ratio was 9,8 and late maternal mortality ratio was 6,4 per 100.000 live births. Main causes of maternal deaths were thromboembolism, mental disorders, preeclampsia and cardiovascular disease. Main causes of late maternal deaths were cancer and mental disorders.

Conclusions: Main goal of the whole process is putting findings into practice. One example are clinical recommendations for thromboprophylaxis that were adopted. To address perinatal depression, we prepared several educational events, materials for media, Web page and online perinatal depression screening test. We are piloting postnatal depression screening by community nurses and are planning to introduce prenatal depression screening by personal gynecologists or midwives.

Keywords**:** Maternal mortality, Slovenia

Has there been a change in maternal mortality over the last five decades?

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Objectives: Maternal mortality still remains a significant problem in obstetrics worldwide. Unchanged or even rising maternal mortality has been reported in several countries. The present study analyzed whether the pattern of maternal mortality has changed over the last five decades at the Department of Obstetrics and Gynecology of the Medical University of Graz.

Methods: Starting in 1981, a registry of maternal deaths was established and regularly updated at our institution based on retrospective data. Between 1963 and 2016, a total of 198,342 women delivered. Thirty-nine consecutive maternal deaths were observed and subdivided into 10 year cohorts. The registry of maternal deaths included deliveries after 28+0 weeks of gestation. Puerperal deaths were defined as deaths up to day 42 post partum. Clinical data from maternal deaths were extracted from hospital records and autopsy reports.

Results: Maternal mortality rates declined from 35.0, 29.0, 2.4, 13.1, to 12.9 per 100,000 deliveries in the four subsequent periods, respectively. Sixty-six % of women who died were 30 years or older. The cesarean section rate was forty-nine percent. Ninety-one percent of the 39 maternal deaths occurred in women with no significant medical history or risk factors. Seventy-five percent of deaths occurred after the 37+0 weeks of gestation. During all study periods, the prevalence of infections and hemorrhage was highest. The main causes of bleeding were uterine rupture and placental abruption, respectively.

Conclusions: Even nowadays, a relevant number of maternal deaths seem to be unavoidable despite optimization of obstetric management.

Risk-adjusted operative delivery rates and maternal-neonatal outcomes as measures of quality assessment in obstetric care: a multicenter prospective study

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Abstract was not received

Maternal mortality in Hungary

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Objectives: Maternal mortality is one of the most important parameters of obstetric care. Maternal death is reported obligatory in Hungary from 1931. The aim of this study was to analyze the tendency of maternal mortality as well as the causes of maternal death from 2001.

Methods: National data concerning maternal mortality were obtained from the Hungarian Central Statistical Office and concerning the causes of maternal death from the National Institue of Obstetrics and Gynaecology. Due to the low number of cases, maternal deaths were analyzed in 5-year periods: 2001-2005, 2006-2010 and 2011-2015. Khi2-test was used for statistical analysis. The level of statistical significance was set at 5%.

Results: Maternal mortality varied between 6.3/100 000 live births and 19.7/100 000 live births without any significant tendency from 2001. There was a significant change in the leading causes of maternal death: sepsis (20.0%, 17.4% and 10.4%, respectively) and thromboembolic events (20.0%, 17.4% and 18.3%, respectively) decreased significantly, while indirect causes incuding accidents (25.0%, 33.3% and 41.7%, respectively) increased significantly.

Conclusions: High yearly variation may be partly explained by unexpected events such as bird flu (H1N1 infection) which was responsible for approximately 20% of maternal death in 2009. The significant decrease in septic and thromboembolic events leading to maternal death can be explained by changes in thrompoprophylaxis and antibiotic prophylaxis. Further significant improvement in maternal mortality is hardly expected as the most important factors that may predispose to maternal death includes pregnancy without prenatal care (~1.5%) and pregnancy at advanced maternal age with icreased occurence of co-morbidities.

Keywords**:** maternal mortality, maternal death

Neonatal mortality - trends in Slovenia

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Objectives: Mortality rates of babies in the first year are often used as a measure of the health status of a population. The neonatal mortality is a key measure of health and care during pregnancy and delivery. The main causes of neonatal deaths are congenital anomalies and complications related to very preterm birth. There are several well-known risk factors related to worst outcomes such as maternal age, multiple pregnancy, maternal conditions, lower socioeconomic status, and risk behaviours. Quality of care also plays a crucial role.
Slovenia is one of the best ranking countries in neonatal mortality.

Methods: We explored the data from the National Perinatal Information System (NPIS) and the Mortality Registry. NPIS contains data on mother and the neonate during pregnancy, birth and postpartum. Data is collected at the time of birth in all maternity hospitals in Slovenia. Mortality Registry contains data on all cases of deaths in Slovenia including cause of death. Matching of cases from the two databases is possible through unique identification number of mother and child.
In this analysis, we included all women who gave birth in Slovenia from 2002 to 2015. We explored the trends in rates of neonatal deaths subdivided into early (0-6 days after live birth) and late neonatal deaths (7-27 days after live birth).
We also explored the trends of known risk factors such as maternal age, education, length of gestation, body mass index, smoking, and time of first prenatal visit. We also looked at causes of deaths.

Results: Early neonatal mortality in Slovenia has decreased in the observed period from 2.46 per 1000 live birth in 2002 to 0.56 in 2015. There was also a decrease in the late neonatal mortality. The greatest decline in early neonatal mortality was observed in babies born with 28th to 33rd weeks and 34th to 36th weeks of gestation.
Of the observed risk factors there was an increase in maternal age, and the share of overweight and obese pregnant women, smoking during pregnancy has remained stable, while the share of women arriving late for the first prenatal visit has decreased. In the observed period, there was no observed increase in the share of preterm babies.

Conclusions: There was no major decrease in the observed known risk factors of neonatal mortality in the observed period, which could explain a decrease observed in the neonatal mortality in Slovenia.
The decline in neonatal mortality in relation to gestational age implies that survival rates of preterm babies have improved.

Keywords**:** Neonatal mortality, early neonatal mortality, late neonatal mortality, risk factors

Mortality and short term outcome of preterm neonates ≤26+6 weeks of gestation at the Division of Neonatology Graz

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Objectives: The aim of the present study was to evaluate the mortality and short-term morbidity in life born preterm neonates with ≤26+6 weeks of gestation, who were treated in the period from 2010 to 2015 at the Division of Neonatology, Department of Pediatrics, Medical University of Graz.

Methods: In this retrospective observational study, we analysed the data of 140 preterm neonates with ≤26+6 weeks of gestation, who were born in the period from January 2010 to December 2015. An only inclusion criterion was gestational age of ≤26+6 weeks. The data were collected from medical records. Mortality and prevalence of the following short-term morbidity were recorded and analysed: intraventricular haemorrhage (IVH) grade III-IV, periventricular leucomalacia (PVL) grade II-III, retinopathy praematurorum (ROP) grade III-V, necrotising enterocolitis (NEC) and spontaneous intestinal perforation with ileostomy (SIP).

Results: Out of 140 life born preterm neonates 13 (9.2%) neonates died, in whom comfort care without intention to treat was performed. Survival rate of 127 life born neonates with intention to treat was 72% (n = 92): 52% in neonates with 23 weeks of gestation, 57% in neonates with 24 weeks of gestation, 83% in neonates with 25 weeks of gestation and 80% in neonates 26 weeks of gestation. The prevalence of short-term morbidity was 15% BPD, 18% IVH grade III-IV, 3% PVL grade II-III, 6% ROP grade II-III, 2% NEC and 19%SIP.

Conclusions: The observed survival rate and short-term outcome in preterm neonates with ≤26+6 weeks of gestation is comparable to the literature. However, the comparability of different centres has to be interpreted with caution due to different eligibility criteria of neonates, different study populations and study design.

Keywords**:** preterm neonates, mortality, morbidity

Neonatal mortality in Croatia

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Assessment of neonatal mortality rates' dynamics from 2007 – 2016 in Croatia.

Data was collected from the structured neonatal mortality questionnaires that are completed yearly in every maternity ward in Croatia.

Early neonatal mortality (ENM) was 2.2 per 1000 live births in 2016 for newborns of all birth weights, including those weighing <500 g, while total neonatal mortality (NM) reached 2.8 per 1000 live births. These rates are similar to those in 2015 (2.3 and 2.9 per 1000 live births, respectively), but mostly lower than in previous years, indicating improvement in neonatal care. Similar trends are found for the rates of mortality to discharge from hospital (MDH), a parameter that more precisely represents the quality of neonatal care, which added up to 3.3 per 1000 live births in 2016. ENM still comprises the largest percentage of MDH (66.7% in 2016). Both ENM and NM rates rise with decreasing newborns' birth weight, as expected, with more than half of the neonatal deaths originating from infants of birth weight < 1500 g. It is well established that the outcome of these premature infants is more favorable if they are born in specialized institutions experienced in neonatal intensive care. In Croatia, proportion of infants weighing <1500 g born in high-level perinatal centers with a neonatal intensive care unit (NICU) is rising, but still has not reached a satisfactory level.

During the past 10 years, neonatal mortality rates in Croatia have oscillated somewhat, but with an overall decreasing trend. Compared to perinatal statistics of some European countries, these results show that further improvement in perinatal care in Croatia is possible, but requires institutional organization of different level neonatal-perinatal units and well equipped NICUs with appropriate technology and sufficient human resources.

Infant mortality in Hungary, trends and contributors

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The number of births in Hungary is around 95,000 annually, with a steady preterm delivery rate of 8.5 % and a current infant mortality rate of 3.6 – 3.9 / 1,000 live births. In 1975, several neonatal intensive care units (NICUs) were founded targeting the intensive treatment of preterm infants. Currently, almost 70 hospitals serve for obstetrical care and among them, 20 NICUs are in charge of the intensive treatment of infants born at less than 34 weeks of gestation.

Between 2008 and 2013, infant mortality rate has been relatively steady (4.9 – 5-1 / 1,000 live births). During these years, a program aiming to increase the rate of antenatal steroid (AS) use finally resulted in a remarkable increase of AS frequency from 30 % up to 85 % among deliveries before the 35th gestational week. Additional programs promoting earlier introduction of enteral feeding and use of own mother milk, as well as prioritisation of non-invasive modes of ventilation in babies born between 24 – 28 gestational weeks were also introduced.

Altogether, the effect of these interventions is reflected by a sharp decline of infant mortality occurring between 2013 and 2017 (half-year) from 5.1 to 3.6 / 1,000 live births.

We believe that the introduction of the above evidence-based interventions played the most important role in the beneficial decline of infant mortality in Hungary observed in the last years.

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