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ABS 1

THE INFLUENCE OF MATERNAL PREGESTATIONAL OBESITY IN OFFSPRING. A NEW PUBLIC HEALTH PROBLEM

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INTRODUCTION

The prevalence of obesity, defined as body mass index over 30 kg/m², is increasing, particularly in women of childbearing age and during pregnancy. Different studies have reported an elevated risk of infant mortality among women who are obese, indicating maternal pregestational obesity as a new public health problem.

OBJECTIVE

To know the incidence and risk of malformations, obesity, asthma, autism and diabetes in infants born from obese mothers.

METHODS

An observational cohort study was undertaken from January 2012 to December 2014. This study recruited 50 infants born from obese mothers and 50 infants born from non-obese mothers. Clinical findings were recorded. The babies have been followed up to date. Statistical analysis were analyzed using SPSS® 15.0. Chi-square and Fischer' tests were used.

RESULTS

There were no differences in gestational age or gender between groups. Medium BMI among obese pregnant women was 39.47 ± 05.02 (X ± SD). There were more cases of diabetes in the group of obese mothers (p = 0.027). 76% of infants born from obese mother were fed with formula at 4 months of age compared with the 56% in the control group. Maternal obesity is associated with a 2.33 times increased risk of asthma or wheeze (OR 95% CI, 1.19-4.58; p < 0.009). There was also a higher incidence of autism spectrum disorder in this group (p < 0.04) (**Fig. 1**). There was no difference in the incidence of prenatal malformations, however, 5 infants had cardiac congenital anomalies (CIA, CIV), 2 had neural defects, and 2 had urogenital anomalies.

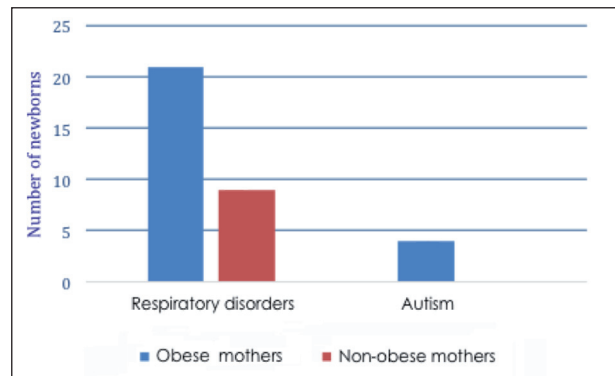


Figure 1 (ABS 1). Higher incidence of respiratory disorders and autism in 50 infants born from obese mothers compared with 50 infants born from non-obese mothers.

CONCLUSIONS

Our results suggest that the odds of having an infant with respiratory disorder or autism spectrum disorder are greater among obese mothers. There is a tendency to give up breastfeeding earlier in this group. Additional epidemiologic and interventional studies are needed. International evidence suggests the importance of the very first 1,000 days of life from the conception.

ABS 2

UNPLANNED NEONATAL ADMISSION RATE AFTER ELECTIVE FAMILY CENTERED CAESAREAN SECTIONS

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INTRODUCTION

Family centered caesarean sections (FCS) are increasingly implemented, but little data is available concerning safety for newborns. We evaluated the incidence and reasons of the unplanned admission rate of neonates after FCS in the Leiden University Medical Center (LUMC).

METHODS

The unplanned NICU admission rate of neonates after implementation of FCS in LUMC in July 2014 was retrospectively reviewed and compared with a historical cohort of standard CS. We collected

gestational age, birth weight, reason for admission and therapy, Apgar scores, temperature 10 minutes after birth and at admission, median oxygen saturation (SpO₂) and heart rate (HR) in the first ten minutes.

RESULTS

In the period July 2014–November 2015, 98 FCS were performed. These were compared to 73 standard CS performed in 2013. The gestational age, birth weight and temperature at admission were comparable (ns). Median (range) Apgar scores at 1, 5 and 10 minutes were 9 (5–10), 9 (8–10), 10 (8–10) after FCS, and 9 (2–10), 10 (5–10), 10 (8–10) after standard CS ($p = 0.26$, $p = 0.011$, $p = 0.002$). Unplanned admission occurred more often after FCS when compared to standard CS (22% vs 8%; $p = 0.013$), without a significant increase in respiratory pathology (10% vs 7%, ns). One third of the babies were separated from their mother during or after the procedure. HR and SpO₂ were comparable in the first ten minutes after birth.

CONCLUSIONS

Neonatal admissions after elective CS increased after implementing FCS, without an increase in respiratory pathology. Separation from the mother occurred often.

ABS 3

CESAREAN DELIVERY AMONG FOREIGN-BORN CHINESE AND US-BORN CHINESE WOMEN IN THE USA

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INTRODUCTION

United States is now the top destination for Chinese immigrants and among all the international immigrants, Chinese immigrants are the second-largest foreign-born population in the United States after Mexicans. However, the information regarding cesarean section rates among Chinese immigrants (foreign-born Chinese women vs. US-born Chinese women) are scarce. Many studies have shown that the determinants of cesarean section in Chinese population are inherently linked to personal preference and social/cultural beliefs but other factors, such as degree of

acculturation and quality of obstetric care also play a role. Therefore, better understanding the risk of cesarean delivery and elective cesarean among the foreign-born immigrants and US-born immigrants can lead to practical strategies for the reduction in cesarean section delivery for Chinese population.

METHODS

We obtained information on all live births within the United States from the birth registry through the 2014 Natality file, collected by National Center for Health Statistics, Vital Statistics Cooperative Program. A retrospective, cross sectional study was conducted with a total 23,990 primiparous Chinese women with singleton birth delivery in 2014. We used multivariate analysis to calculate the risks of cesarean section and non-medically indicated (elective) cesarean section for the US-born Chinese-American and foreign-born Chinese-American women.

RESULTS

The overall rate of cesarean section in our Chinese women was 26.1 percent. Among all cesarean section, 40.6 percent were considered non-medically indicated. Foreign-born Chinese women had significantly higher odds of cesarean section than US-born Chinese women (crude odds ratio [OR]: 1.12; 95% CI: 1.02, 1.22). After adjustment for socioeconomic factors, cesarean section rate remained significantly higher for foreign-born Chinese women compared with US-born Chinese women (adjusted odds ratio [AOR]: 1.28; 95% CI: 1.16, 1.41). For non-medically indicated cesarean section, foreign-born Chinese-American women were still at significantly higher odds than US-born Chinese women (OR: 1.25; 95% CI: 1.10, 1.41; AOR: 1.48; 95% CI: 1.28, 1.70). The correlation was even stronger in well-educated and wealthier Chinese women.

CONCLUSIONS

This study found an increased rate of caesarean sections as well as elective caesarean sections among foreign-born Chinese women. However, the association between immigration status and cesarean section varied among different socioeconomic groups.

ABS 4

THE RELATION BETWEEN OUTDOOR AIR POLLUTION AND SUDDEN INFANT DEATH SYNDROME – A POPULATION-BASED CASE-CONTROL STUDY

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INTRODUCTION

Most available evidence relating air pollution and mortality was obtained from studies of adults and children. Only a few studies evaluated the association between infant mortality and air pollution. To examine the potential acute effects of air pollution on sudden infant death syndrome (SIDS) and respiratory deaths in postneonatal period for infants in Taiwan, we conducted a population-based case-control study from 1997 to 2002.

METHODS

For each case of infant death, we randomly selected 20 matched controls from all infants of the same gender who were born on the same day and were alive when the case died. Twenty-four hour measurements of air pollutants and meteorological factors of each case and control for 1- to 14-day lags were constructed from one of the 55 air monitoring stations. We used conditional logistic regression to estimate the effects of air pollutants on SIDS and respiratory deaths, controlling for potential confounders.

RESULTS

There were 398 SIDS and 121 respiratory deaths for infants. Either in single- or multi-pollutant model, we found that 100 ppb increment in carbon monoxide (CO) with 1- to 14-day lags was associated with a significant increase in SIDS (**Fig. 1**). There was no significant relationship between air pollution and respiratory death on 1- to 14-day lags.

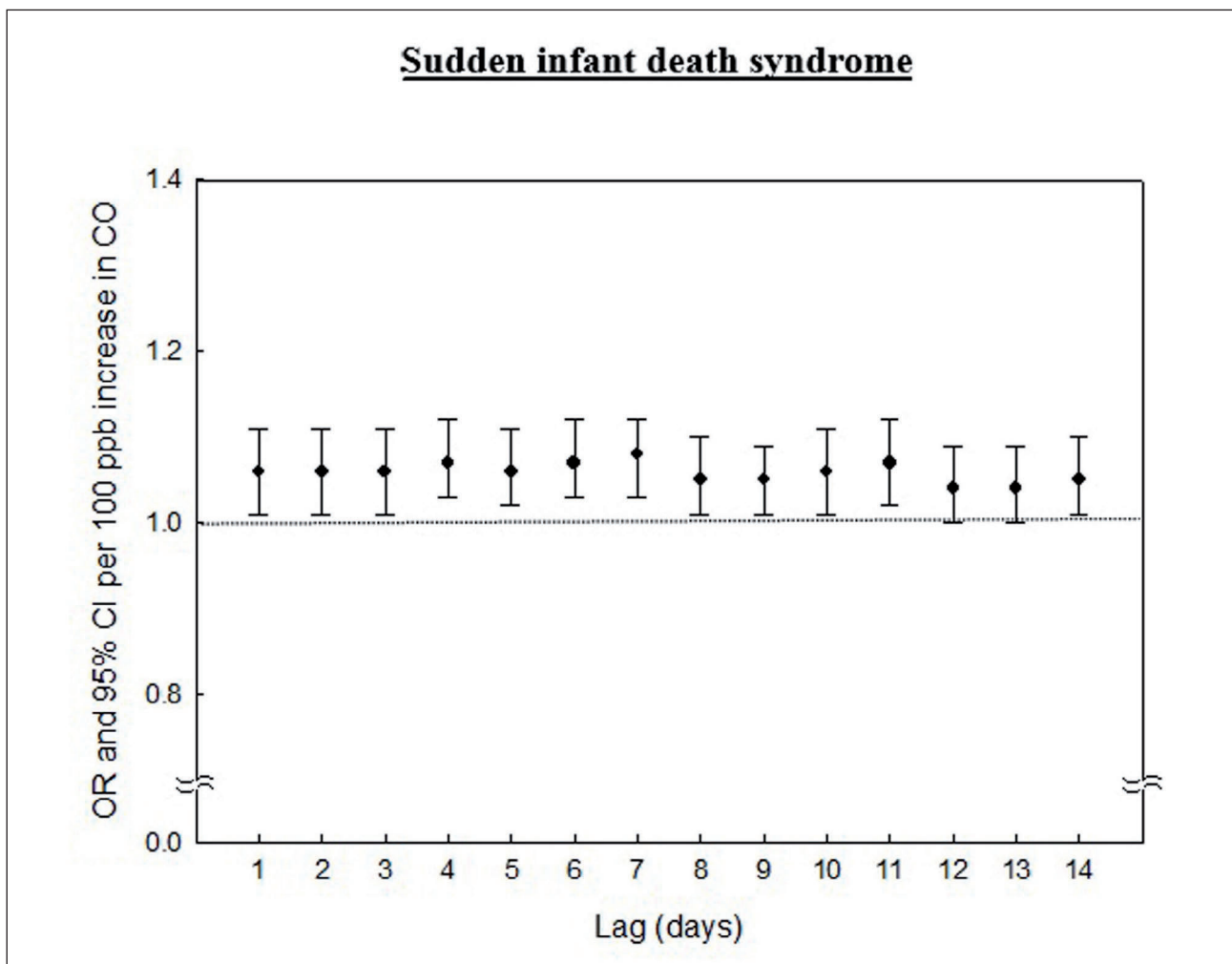


Figure 1 (ABS 4). Significant association between 100 ppb increment in carbon monoxide (CO) with 1- to 14-day lag and increase in sudden infant death syndrome.

CONCLUSIONS

Short-term CO exposure was associated with a significant increase in SIDS of the postneonatal period. In the future, we should investigate chronic effects for long-term air pollution exposure period between birth and death on infant mortality and examine the potential biologic mechanism.

ABS 5**LONGITUDINAL GROWTH OF TURKISH VERY LOW BIRTH WEIGHT INFANTS**

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INTRODUCTION

Postnatal longitudinal growth charts for low birth weight infants become outdated after sometime and must be renewed as peri- and postnatal care improves. Furthermore, growth patterns may differ in different regions of the world. Therefore, we aimed to create up-to-date postnatal longitudinal growth curves for Turkish very low birth weight preterm infants and to investigate the relation between growth and major neonatal morbidities such as bronchopulmonary dysplasia, sepsis, intraventricular hemorrhage and retinopathy of prematurity.

METHODS

This is a single-center, prospective cohort study. Growth was prospectively assessed for 280 infants with birth weights between 501 to 1,500 g between January 1, 2012 and August 31, 2013. Infants were included if they were admitted to unit before 24 hours of age and survived at least for 7 days. Infants with major congenital anomalies were excluded. Body weight, length and head circumference were measured from birth until the earliest of the following events: discharge, death, postnatal age of 120 days, or the baby reaching a body weight of 2,000 g. Nutritional policies were not changed in our unit during the study period, in order to avoid causing differences in measurements.

RESULTS

Postnatal growth curves were constructed for body weight, length and head circumference. Appropriate-for-gestational age infants who developed chronic

lung disease, severe intraventricular hemorrhage, necrotizing enterocolitis, or late onset-sepsis gained weight slower than the ones without those morbidities.

CONCLUSIONS

Postnatal growth curves should be monitored after birth to assess normal growth rate and detect deviations from normal curve. Thus we could make required changes in nutritional management and therapeutic interventions related to illness to support normal growth. This is the first postnatal growth curve study from Turkey. It is better for NICUs to use regional growth curves.

ABS 6**FETAL SONOGRAPHIC FINDINGS IN A CONFIRMED CASE OF BECKWITH-WIEDEMANN SYNDROME (BWS)**

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INTRODUCTION

Beckwith-Wiedemann Syndrome (BWS) is a rare syndrome characterized by macroglossia, macrosomia, visceromegalies and abdominal wall defects. It is associated with the development of embryonal tumors and hypoglycemia. Although the definitive diagnosis is made in the postnatal stage, we are currently able to suspect it during the prenatal period.

CASE REPORT

We report on the prenatal features and the outcome of a pregnancy complicated by BWS that was proven by molecular genetic analysis. The baby was born at 39 weeks of gestational age and her weight was 4,310 g (above 97th percentile). Her prenatal ultrasounds showed macroglossia, macrosomia, umbilical hernia ring, polyhydramnios, cardiomegaly and adrenal glands in the upper limit of normal. She was admitted to the Neonatal Unit for suspected prenatal malformation. The diagnosis of BWS was made based on the clinical examination, and it

was confirmed by molecular genetic analysis. The patient had macroglossia, macrosomia, prominent abdomen, diastasis of the abdominal wall muscles and large umbilical hernia. She needed intravenous glucose during the first 72 hours. Abdominal, brain ultrasounds and echocardiography did not show any malformation. The genetic study showed a loss of methylation on the maternal chromosome at imprinting centre-2(IC2) in the 11p15 region. She is being followed by the Children's Oncology Unit which controls tumor markers, and abdominal ultrasound as a screening of embryonal tumors, without alterations at the moment.

CONCLUSIONS

BWS is responsible for most of syndromes with overgrowth and macroglossia. Different genetic and epigenetic alterations have been described that affect the risk of recurrence and the phenotype. In this respect, prenatally detectable features may be helpful to anticipate the diagnosis and certain postnatal complications as swallowing or respiratory problems as well as the outcome. It is essential to follow these patients at risk of developing long-term embryonal tumors and endocrine metabolic complications.

ABS 7

CORD BLOOD PENTRAXIN 3/CD36 IN FETAL MACROSOMIA

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INTRODUCTION

Fetal macrosomia is linked to cardiovascular risk through endothelial dysfunction, cardiac remodeling and insulin resistance. The common pathogenetic mechanism for the above is the activation of immune and inflammatory cells. Macrophages and monocytes release proteins like pentraxin3, shown to modulate immunoinflammatory responses, and glycoprotein CD36, that plays a distinct role in atherosclerosis, insulin resistance and metabolic syndrome, linked to the development of cardiovascular diseases later in life. We aimed to investigate cord blood pentraxin3 and CD36 concentrations in large-for-

gestational-age (LGA) pregnancies compared to appropriate-for-gestational-age (AGA) pregnancies, and to investigate their association with several demographic parameters of infants at birth.

METHODS

Pentraxin3 and CD36 concentrations were determined by ELISA in 80 cord blood samples of full-term singleton LGA (n = 40) and AGA (n = 40) pregnancies. The classification to LGA/AGA was based on customized birth-weight standards adjusted for several determinants of fetal growth.

RESULTS

Cord blood pentraxin3 and CD36 concentrations were similar in LGA and AGA pregnancies. In the LGA group of infants, fetal pentraxin3 concentrations positively correlated with CD36 (r = 0.443, p = 0.004).

CONCLUSIONS

Pentraxin3 and CD36 levels are probably not affected in the perinatal period in cases of fetal macrosomia. However, the positive correlation between fetal pentraxin3 and CD36 in this group might indicate an inflammatory pathway linking extreme fetal growth with the predisposition to metabolic syndrome and cardiovascular pathology later in life.

ABS 8

NEWBORN GENETIC SCREENING FOR CONGENITAL CENTRAL HYPOVENTILATION SYNDROME IN 41,152 NEWBORNS

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INTRODUCTION

Congenital central hypoventilation syndrome (CCHS) is a rare neurological disorder characterized by abnormal autonomic central nervous system control of breathing during sleep, caused by Paired-like homeobox 2b (*PHOX2B*) gene mutations. The estimated prevalence is low (< 1%). Approximately 92% of individuals with the CCHS phenotype will be heterozygous for a polyalanine repeat expansion mutation.

METHODS

We screened 41,152 newborns of DNA from dried blood spots on filter paper. Magnetic beads separation of trace DNA techniques, combined with polymerase chain reaction (PCR) and direct sequencing were used to study the feasibility of newborn genetic screening.

RESULTS

Surprisingly, the polyalanine expansion mutation was found in 2 newborns in our population study with (GCN)24/(GCN)20 repeat. There are other types of polyalanine contraction found in the remaining 41,150 individuals. With a frequency of 90.66% (37,311 cases) in the population, (GCN)20/(GCN)20 is the most common allele while (GCN)15/(GCN)20 is second in the order of allele prevalence with a frequency of 7.84% (3,225 cases). Additionally, the (GCN)7/(GCN)20, (GCN)13/(GCN)15, (GCN)13/(GCN)20, (GCN)14/(GCN)20, (GCN)15/(GCN)15, and (GCN)10/(GCN)20 alleles were also identified in 0.21% (85 cases), 0.02% (10 cases), 0.91% (373 cases), 0.20% (82 cases), 0.10% (42 cases) and 0.01% (6 cases), respectively. The rare genotypes were also seen in our population, such as (GCN)7/(GCN)13, (GCN)7/(GCN)15, (GCN)8/(GCN)20, (GCN)9/(GCN)20, (GCN)13/(GCN)13, (GCN)14/(GCN)15, (GCN)15/(GCN)17, (GCN)18/(GCN)20, (GCN)19/(GCN)20, (GCN)20/(GCN)21, and (GCN)20/(GCN)22.

CONCLUSIONS

We successfully established the newborn genetic screening technology in CCHS to advance genetic diagnosis to the time point of the neonatal period. With early treatment, the prognosis of this disease will be greatly improved.

ABS 9**OFFSPRING OF DIABETIC MOTHER: THE IMPORTANCE OF MATERNAL GLYCEMIC CONTROL**

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INTRODUCTION

Infants of diabetic mothers (IDM) suffer from a metabolic disturbance that can lead to adverse neurodevelopmental outcomes. Neonatal encephalopathy (NE) is a condition of altered neurological function that results in high morbidity. When associated with perinatal asphyxia, it is referred as hypoxic-ischemic encephalopathy (HIE). Surveys state neonatal hypoglycemia associated with HIE are more detrimental than either condition alone.

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CASE REPORT

A term infant was delivered by urgent C-section at 37⁺² weeks gestation. Apgar scores were 6 and 10 (1 and 5 minutes, respectively). His mother was a 32 year-old primigravida Bulgarian woman, with tipe 1 diabetes mellitus since infancy. She suffered retinopathy, hypertension and chronic kidney disease. She underwent a non-complicated pregnancy with no hyperglycemia but frequent hypoglycemic incidents, even during labour. The male newborn required resuscitation with non-invasive ventilation. Umbilical cord blood pH was 6.99 and 7.08. He was admitted to NICU due to respiratory distress and perinatal asphyxia. He required respiratory support and developed symptomatic hypoglycemia requiring high intravenous dextrose infusion and glucagon. Echocardiography showed patent arterial duct, hypertrophic cardiomyopathy, pulmonary hypertension. He developed signs of NE: abnormal state of consciousness, diminished spontaneous movements, feeding difficulties, poor tone and reduced primitive reflexes. Magnetic resonance imaging (MRI) showed increased intensity at the frontal and occipito-parietal lobes in T2, without diffusion restriction. The newborn status improved and he was discharged when he was 20 days old.

CONCLUSIONS

There are multiple complications in the IDM, most of them related to inadequate glycemic control. Hypoglycemia is associated with risk for brain injury and adverse neurodevelopmental outcomes and it is a common comorbidity in term infants with HIE. Many surveys have shown the radiological patterns in NE due to HIE or hypoglycemia, but it is rather difficult to discern between them. Therefore, in an infant with NE, the timing of the brain injury is the key to discriminate its etiology. Neuroimaging with MRI is the ideal tool to demonstrate the extent of injury and predict outcomes.

ABS 10**PREVALENCE AND PRENATAL DIAGNOSIS OF CONGENITAL MALFORMATIONS IN A TERTIARY HOSPITAL**

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INTRODUCTION

Congenital anomalies are one of the most important causes of perinatal mortality and morbidity and there has been an increased interest to study them over the last years.

Our objective was to assess the prevalence of congenital anomalies without interruption of pregnancy and postnatal prognosis at our centre.

METHODS

Descriptive observational study of fetuses with congenital malformations in a tertiary hospital from January 2015 to April 2016. Data concerning the ultrasonographic (US) findings, gestational age (GA) at diagnosis, presence of associated malformations and prenatal additional studies were collected. All newborns were followed after birth. To collect primary data, we used a database in Excel® 2013 and built tables to calculate percentage, mean and standard deviation.

RESULTS

We evaluated 113 pregnant women with prenatal diagnosis of fetal malformation. The diagnosis was established at 24.1 weeks GA and 49.5% of mothers received counseling in perinatal consultation at 34.1 ± 4.8 weeks GA. There were no differences in sex of the fetus. Amniocentesis was performed in 23.8% of cases, with detection of chromosomal abnormality in one of them. 8% of infants were born prematurely, with a need for hospital admission in 43.3% of the total. Nephrourological abnormalities were the most common (45%), followed by cardiovascular (14%), bone (7.2%) and brain (5.4%) abnormalities. Postnatal diagnostic confirmation was delivered in 71.2% of cases. 3 patients died in the neonatal period (2.6%), two of which with severe cardiac malformation and the other one with Patau syndrome.

CONCLUSIONS

The best development of obstetrical ultrasound has improved prenatal diagnosis, and the degree of correlation between prenatal and postnatal

ultrasonographic findings is high. The joint work of obstetricians and neonatologists is important to evaluate the local prevalence of congenital malformations.

ABS 11

SATISFACTION AFTER A NEW CARE PLAN IN THE MATERNITY AREA

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INTRODUCTION

After assessing the shortcomings identified in the Maternity area of our hospital, regarding immediate postpartum period care during their stay in the maternity ward, a change of dynamics was decided. This involved labor room staff, mainly midwives, obstetricians, nurses, aides and neonatologists of motherhood. The changes that took place involved the following: 1) establishing and recording skin-to-skin duration; 2) newborn examination in the room by a joint visit between the nurse and the neonatologist; 3) a training course on breastfeeding for the staff attending the maternity. We conducted a survey to find out the opinion of pregnant women after implementing the new care plan for the healthy child.

METHODS

A cross-sectional descriptive study was conducted through a satisfaction survey of mothers admitted to the maternity ward of a tertiary hospital, in the period between October 2015 and February 2016. The following data were collected: socio-demographic background, pregnancy and perinatal outcomes, having received childbirth preparation, willingness to breastfeed, type of birth and postnatal feeding. Satisfaction with the support received in relation to the care of the newborn and support to breastfeeding was also recorded. Exclusion criteria: admission in neonatology unit. The degree of satisfaction was collected on a scale of 0 to 5 (0: nonsatisfied, 5: very satisfied).

RESULTS

A total of 225 surveys were collected. 69.3% of mothers reported being satisfied or very satisfied with advice on breastfeeding, 76.9% were satisfied with early skin-to-skin contact, 88.5% assessed

with a score of 4 and 5 satisfaction with the daily pediatrician visit in the room and 78.3% with the advice of newborn care. 75.5% of mothers who had had a previous baby in the last years in our service showed improvement in their level of satisfaction.

CONCLUSIONS

Through surveys we were able to assess the positive impact of the measures adopted on the satisfaction of mothers. The counseling and early contact of parents with healthy newborn improves the level of satisfaction in the surveyed mothers.

ABS 12

BREASTFEEDING PROMOTION AS HEALTH RIGHT FOR EVERY BABY FROM CALABRIA

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INTRODUCTION

Calabria records high rates of infant obesity in the national context. Breastfeeding is a protective factor. The regional prevention Plan 2010-2012 has approved a biennial project (plan 12) for breastfeeding promotion, protection and support in hospitals and in the community, in order to prevent child obesity. As reference, a sample survey led by the Italian National Institute of Health in Calabria in 2002 showed the rates of exclusive breastfeeding to be 32% at the moment of discharge from hospital and 12% at six months.

OBJECTIVES

To analyze the breastfeeding promotion project, whose aim is a 10% increase in the rate of women who exclusively breastfeed at the moment of discharge from hospital and continue to breastfeed exclusively for the first 6 months of baby's life.

METHODS

Training courses were carried out for breastfeeding promotion, protection and support, following the WHO/UNICEF model. They were attended by healthcare professionals involved in antenatal care in hospitals and in community. Training courses resulted in the implementation of the following activities: antenatal courses, postnatal home visits, support of breastfeeding initiation in the hospitals. The new breastfeeding rates were estimated through the use of observational survey leading questionnaires of women who lived in Calabria. The same questionnaire was

filled in at the moment of discharge from hospital (with a face-to-face meeting) and six months later (over the phone). The observational survey was performed in 12 hospitals in the period between 1st-30th November 2011 and 1st-30th May 2012.

RESULTS

From the analysis of 1,571 questionnaires, 53% of the women said to exclusive breastfeed at the moment of the discharge from hospital. The factors that were more likely to be associated with breastfeeding were the following: type of birth (spontaneous vaginal 61.1% vs. C-Section 38.9%), timing of breastfeeding initiation from birth (less than 1 hour 68% vs. more than 1 hour 32%); use of pacifier (yes 42% vs. no 58%). Interviews after six months showed that 21% of women were still exclusively breastfeeding and the same factors were associated. The rate of breastfeeding mothers at discharge from the hospital increased from 32% in 2002 to 53% in 2012, while breastfeeding at 6 months increased from 12% to 21%.

CONCLUSIONS

The study shows that since the survey conducted in 2002 by the Italian National Institute of Health, the rate of breastfeeding women increased both at discharge from hospital and at six months of life.

ABS 13

CHANGES IN NUTRITIONAL STATUS OF VLBW INFANTS FROM BIRTH TO DISCHARGE AND 40 WEEKS CORRECTED AGE (CA) IN THE NEOCOSUR NETWORK (NN)

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BACKGROUND

Neocosur is a collaborative neonatal network created in 2000. The Follow-up program started

collecting data in 2013 and continues to the present.

OBJECTIVE

To describe the nutritional progress of Very Low Birth Weight (VLBW) infants entering 10 Neocosur Network (NN) centers, that take part to NN at three different times: 1) birth, 2) NICU discharge and 3) 40 wks corrected age (CA).

METHODS

Observational retrospective study of cohort data obtained by the NN. All VLBW (BW 400-1,500 g) born between 01/01/2013 and 12/31/2014 were studied. Data from neonates with follow-up to 40 weeks CA were included. Statistical analysis was performed with SPSS® 17.0. Effects were considered significant if p-values < 0.05. Anthropometry at the 3 selected times were analyzed to assess growth compared to the Fenton Preterm Growth standard (exact Z Score and proportion of neonates Pc90).

RESULTS

VLBW entered in the Neocosur database, n = 815. Mean Birth Weight (BW) was 1.15 kg (SD ± 0.24), mean Gestational Age (GA) was 29.6 weeks (SD ± 2.5 weeks), 53.6% were female. 64.5% were from Argentina (5 centers), 31.5% from Chile (4 centers) and 4.0% from Peru (1 center).

Nutritional data by gestational age are presented below.

At birth: IUGR = 20.7%, AGA = 74.9% and LGA = 4.4%.

At discharge: restricted post-natal growth (RPGR) 58.2%, normal 41.3%, overweight 0.5%.

At term CA: RPGR growth 42.2%, normal 52.1% and overweight 5.7%.

Data analysis by center indicates significant differences range: IUGR: 8.7-25.6%. RPGR: 40.8-86.3% and RPGR at 40 weeks: 18.5-61.4%. Data analysis by countries also shows significant differences: IUGR: 14.5-24.2%. RPGR at discharge: 44.4-71.9% and RPGR at 40 weeks 26.9-51.4%.

CONCLUSIONS

In utero and postnatal growth rates vary between centers and between countries. There is an increase in growth retardation after birth nearly by 3 fold, followed by an improvement by age of term. There is a need in the Neocosur's network to examine hospital nutritional practices to prevent this phenomenon.

ABS 14

NEONATAL MORBIDITY IN INFANTS OF DIABETIC MOTHERS

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INTRODUCTION

Infants of diabetic mothers are at increased risk for morbidity like congenital anomalies, respiratory distress, hematologic complications, metabolic disorders and birth trauma. Diabetes prevalence is 3-5% and it is therefore an important problem in population health. The most common comorbidities are the following: hypoglycemia (10-50%), hypocalcemia (15-30%), macrosomia (15-40%), preterm delivery (15), RIC (10-20%), polycythemia, (10-20%), respiratory distress (20%), congenital anomalies (5-10%).

OBJECTIVE

To assess the association of congenital anomalies in infants of diabetic mothers admitted to hospital, and to evaluate the prevalence of neonatal comorbidity in gestational diabetes versus pregestational diabetes.

METHODS

Design: retrospective cohort study conducted at the Neonatology section of Santa Lucia Hospital. Patients: all newborns admitted to Neonatal Unit born to gestational diabetic mothers at this hospital in 2013-2015. Intervention: data collection by file review. Outcomes measures: primary outcomes (congenital anomalies prevalence and cardiomyopathy prevalence), secondary outcomes (metabolic disorders, respiratory distress and cardiovascular anomalies). Statistical analysis: data were analysed with SPSS® version 21 Software. Chi-square test was used.

RESULTS

Of the 8,576 neonates born in our medical centre during the study period, 6.2% pregnancies had diabetes. 21% newborns were admitted to the Neonatal Unit (71% gestational diabetes versus 29% pregestational diabetes). Cesarean delivery percentage was 46%, macrosomia 27%, perinatal asphyxia 6% and brachial plexus injury 2%. Infants of diabetic mothers had metabolic disorders in 53% of cases. The most common were hypoglycemia and hypocalcemia. Respiratory distress rate was 28%, the most common causes were transient tachypnea of the newborn, perinatal asphyxia and meconium aspiration syndrome. 32% of newborns had congenital heart disease. The most frequent were patent foramen ovale followed by atrial septal defect, ventricular septal defect and hypertrophic

cardiomyopathy. There was an increased risk of macrosomia, hypertrophic cardiomyopathy, heart disease and hypoglycemia in infants of pregestational diabetes mothers compared to gestational diabetes.

CONCLUSIONS

Prevalence of gestational diabetes and pregestational diabetes was 4.4% and 1.8%, respectively in our medical center. The morbidity rate was similar to reported rates. Pregestational diabetes is associated with higher risk of macrosomia, hypoglycemia, heart diseases and hypertrophic cardiomyopathy, compared with gestational diabetes.

ABS 15

LATE PRETERM INFANT MORBIDITY AT UNIVERSITY HOSPITAL OSIJEK, CROATIA

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INTRODUCTION

Late preterm infants are born between 34^{0/7} and 36^{6/7} weeks of gestational age [1]. Evidence shows that late preterm infants are at greater risk of developing health complications and have higher mortality rate compared with term infants [1, 2]. Our report describes the health complications and short-term outcomes for late preterm infants treated in our institution.

METHODS

A retrospective cohort study was conducted over a 15 month period for all late preterm infants born and treated at University Hospital Osijek, Croatia (January 2015 to March 2016)

RESULTS

During the study period a total of 159 late preterm neonates were treated in our institution. The incidence of in-house born late preterm infants was 6.05%. Out of 150 late preterm infants born in our institution, 69 infants (43.4%) remained with their mother after birth. 81 infants (56.7%) were directly admitted to our Special Care Nursery and/or NICU. 16 infants who initially remained with their mothers required additional care at Special Care Nursery or NICU (23.1%). 23 infants were SGA/LGA (21.6%). The average gestational age of all late preterm infants was 35^{2/7} weeks (range 34^{0/7}-36^{6/7}), birth weight 2,468 g (range 1,410-4,150 g). 34 infants (20.2%) had hypoglycemia, 84 infants had jaundice (50%), 100 infants (59.5%) received intravenous infusions,

99 infants (58.9%) underwent sepsis evaluation and 23 infants (13,6%) received mechanical ventilation. The average hospital stay was 11 days (range 3-29 days).

CONCLUSIONS

Our report adds to the growing understanding that late preterm infants are a special population of infants who require a specific approach.

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ABS 16

FOCAL HEPATIC HEMANGIOMA

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INTRODUCTION

Hemangiomas and hemangioendotheliomas are the most common nonmalignant vascular lesions of children, with 85% of patients diagnosed within the age of 6 months, suggesting a congenital nature of the neoplasia. Although hemangiomas are usually confined to the skin, other organs can be affected. They can range from small incidental findings on scans done for other reasons, to giant or multifocal lesions whose clinical manifestations may include congestive heart failure due to arteriovenous shunting, jaundice due to obstruction, consumptive coagulopathy due to Kasabach-Merritt syndrome, and medically resistant hypothyroidism. Although not malignant, these lesions have been treated with medical therapy, chemotherapy, surgery, or a combination of these with some success.

METHODS

We report a case of congenital focal hepatic hemangioma in a newborn female with congenital heart failure. All clinical tests done during pregnancy were normal. Prenatal ultrasound did not reveal any abnormality and growth parameters were within normal range. The patient was born at 38 weeks. Physical examination revealed jaundice, abdominal distension with hepatomegaly and increased liver consistency; she had also some skin telangiectasia and a heart murmur. In blood tests done at birth, she

had cholestasis with total bilirubin of 4.21 mg/dl (direct 3.3 mg/dl), without significant transaminemia. She also had anemia (hemoglobin 10.2 g/dl) with reticulocytosis, platelets $140 \times 10^9/L$, C reactive protein 15.2 mg/dL and coagulopathy with Quick value of 48%. Screening for TORCH diseases and thyroid hormones were without alterations. Abdominal x-ray showed an abdominal mass and chest x-ray cardiomegaly. She was treated with ampicillin and gentamicin for three days until blood cultures were negative. All serologies were negative too. Liver ultrasound demonstrated a huge (73 x 44 x 56 mm), highly vascular lesion of heterogeneous appearance affecting the left hepatic lobe. This finding suggested a vascular hepatic malformation or an infantile hepatic endothelioma. Cardiac ultrasound demonstrated signs of hemodynamic overload, with a moderately dilated and slightly hypertrophic right ventricle with good systo-diastolic function, a vessel of arterial flow leaving the descendent aorta and nourishing the tumor, and flow returns through a severely dilated (8 mm) left suprahepatic vein.

RESULTS

In our case, abdominal NMR revealed a unifocal lesion that depends from the left hepatic lobe. Embolization of 2 hepatic arteries that nourished the tumor was done. The patient showed a significant clinical improvement, with cardiac ultrasound and hematologic stabilization, tolerating oral intake. However, the mass did not decrease in size at follow-up. She is now been treated with corticoids for 6 weeks. After embolization, cardiac ultrasound did not show hemodynamic overload. If the mass still grows and causes congestive heart failure, consumptive coagulopathy or abdominal compartment syndrome surgery, another embolization will be performed.

CONCLUSIONS

In congenital hepatic hemangiomas, imaging tests show the presence of a space-occupying lesion in the liver and may provide a diagnosis or a differential diagnosis. However, some cases undergoing involution may contain calcifications, fibrosis and vascular channel deficiencies, which make it difficult to differentiate from other hepatic neoplasms. Initially, patients may require medical management, but careful observation is necessary and if there are signs of deterioration, urgent steps should be taken to control the arteriovenous fistulas. Hepatic artery embolization is possible in isolated lesions.

ABS 17

THE HORMONAL AND METABOLIC STATUS OF THE NEWBORN WITH IUGR

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INTRODUCTION

The process of influence of adverse factors in the early critical stages of fetal development on the structure of the tissue, organs and their functioning is called fetal programming. Among the possible causes of obesity, metabolic syndrome, diabetes and cardiovascular diseases, the role of disturbed prenatal metabolic programming became apparent, especially in pregnancies complicated by IUGR. The aim of our investigation was the assessment of the level of insulin, autoantibodies to insulin, C-peptide, somatomedin C, leptin, glycosylated hemoglobin (HbA1C) and pancreatic lipase in newborns with IUGR.

Table 1 (ABS 17). Comparative evaluation of the hormonal and biochemical analysis of umbilical cord blood in uncomplicated pregnancy and IUGR of varying severity ($M \pm 2$ SD).

| Parameter | Uncomplicated pregnancy | IUGR I degree | IUGR II degree | IUGR III degree |
|------------------------|-------------------------|------------------|-------------------------------|---------------------------------|
| Glucose, mmol/L | 4.95 \pm 0.23 | 4.87 \pm 0.42 | 3.22 \pm 0.18 | 2.15 \pm 0.25 ^{a,b} |
| Insulin, mU/L | 9.15 \pm 2.05 | 8.26 \pm 1.18 | 6.08 \pm 0.84 | 2.53 \pm 0.63 ^{a,b} |
| C-peptide, ng/ml | 1.8 \pm 0.24 | 1.87 \pm 0.38 | 1.23 \pm 0.26 ^a | 0.45 \pm 0.25 ^{a,b} |
| Somatomedin C, ng/ml | 121.74 \pm 1.02 | 98.18 \pm 1.24 | 63.22 \pm 0.44 ^a | 23.41 \pm 0.21 ^{a,b} |
| Leptin, ng/ml | 3.18 \pm 0.24 | 2.87 \pm 0.34 | 1.96 \pm 0.23 ^a | 1.23 \pm 0.36 ^{a,b} |
| HbA1C, % of hemoglobin | 4.3 \pm 0.66 | 4.56 \pm 1.03 | 3.74 \pm 0.58 | 2.18 \pm 0.24 ^{a,b} |
| Amylase, U/L | 56.2 \pm 12.4 | 61.9 \pm 18.1 | 23.4 \pm 6.2 ^{a,b} | 12.2 \pm 0.8 ^{a,b} |

^a Significance of differences compared with the control group ($p < 0.05$); ^b reliability of differences compared with compensated Mo and IUGR I degree ($p < 0.001$).

METHODS

We conducted a prospective study of 135 pregnant women and newborns with IUGR: I degree – 41.1%, II degree – 40.0%, III degree – 18.9%. After birth and umbilical cord crossing, a sample of 10 ml of cord blood was taken for the assessment of hormonal and biochemical status of newborns.

RESULTS

In IUGR I degree levels of glucose, C-peptide remained practically unchanged; the proportion of glycosylated hemoglobin levels slightly increased (by 6.05%), reflecting a temporary hyperglycemia in response to a slight decrease in the insulin synthesis; the level of insulin was reduced by only 10%. In IUGR III degree a decrease in the level of glucose in the blood was observed: average 2.3 times the development of hypoglycemia; insulin – 3.62 times; in the C-peptide – 4 times; insulin-like growth factor 1 (somatomedin C) – 5.2 times (**Tab. 1**). Noteworthy, exocrine function of the pancreas is reduced in severe fetal growth retardation, reflecting the 4.6-fold reduced level of amylase.

CONCLUSIONS

Our investigation demonstrated high-risk factors in IUGR for the development of socially significant endocrine and metabolic disorders (dysplasia and short stature, metabolic syndrome and diabetes, infringement of function of the gastrointestinal tract, chronic pancreatitis, gastroduodenitis, etc.).

ABS 18

HIRSCHSPRUNG'S DISEASE IN NEWBORN: A STUDY OF 7 CASES

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INTRODUCTION

Hirschsprung's disease is a congenital intestinal paralysis due to absence of ganglion cells in enteric plexuses. We aim to describe the specificities of the neonatal form.

METHODS

It is a retrospective study of 7 cases of Hirschsprung's disease hospitalized in our unit between January 2006 and December 2015. Diagnosis was based on radiological and/or pathological signs.

RESULTS

All newborns were male. One was premature. Two newborns had a congenital heart disease, one of them had Trisomy 21. Another newborn had hypothyroidism. An emission delay of meconium (average of 40 hours) was noted in all cases. The disease was revealed by a lower digestive occlusion in 4 cases, an acute enterocolitis in 2 cases and a bowel perforation in one case. The contrast enema practiced in 6 cases and was pathognomonic in 4 cases. Rectal biopsy performed in 6 cases confirmed histological diagnosis in all cases. Surgical treatment was performed in 6 cases with a median time between symptoms and surgery of 24 days (4 to 73 days). A colo-anal lowering was performed in four cases, a resection of the right colon with double colostomy in one case and a right transverse colostomy in one case. Outcome was favorable in 5 cases. Two newborns died consecutively to severe congenital heart disease in one case and severe sepsis secondary to cecum perforation in the other one.

CONCLUSIONS

Hirschsprung's disease is the most common cause of digestive occlusion in the newborn. The main complications in the neonatal form are acute enterocolitis and intestinal perforation.

ABS 19

PERINATAL RISKS OF BIRTH AT 36 AND 37 WEEKS GESTATION VERSUS TERM DELIVERY: CASE-CONTROL STUDY

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INTRODUCTION

Late preterm and early term delivery rate are increased worldwide in the latest years due to multiple factors. Both late preterm and early term birth are associated with an increased rate of perinatal complications as revealed by data published in the literature.

AIMS

To evaluate the short-term prognosis of infants born at 36 and 37 weeks gestation, compared to infants delivered at term.

METHODS

For each infant born at 36 and 37 weeks a pair term infant having a BW \pm 100 g was identified in the database of the unit during the study period (1 Jan 2013 - 31 Dec 2015). Epidemiological data, labor and delivery information, and data regarding perinatal complications were extracted from the database and compared between the two groups using SPSS® 10.0 for Windows; p was considered statistically significant if < 0.05 (confidence interval 95%).

RESULTS

The study included 1,092 infants: 203 delivered at 36 weeks, 343 delivered at 37 weeks and their peers, 203 and 343 term infants. Baseline characteristics of the infants born at 36 and 37 weeks were not significantly different from term newborns. Apgar score was lower at 1 and 5 minutes in infants

delivered at 36 and 37 weeks vs term ($p < 0.05$); need for resuscitation at birth was increased at 36 weeks versus term (OR 2.06 [1.29-6.82]). Infants born at 36-37 weeks gestation had increased risk for RDS (OR 1.9 [1.71-2.30] at 36 weeks; OR 2.11 [CI 1.94-2.39] at 37 weeks), jaundice (61.6% vs 36% at 36 weeks; 47.5% vs 22.2% at 37 weeks), anemia (28.7% vs 10.3% at 36 weeks; 30.7% vs 15.9% at 37 weeks), and the need for NICU admission (16.3% vs 3.4% at 36 weeks; 10.5% vs 1.2% at 37 weeks).

CONCLUSIONS

Delivery at 36 and 37 weeks gestation increases the risks for perinatal complications, mostly related to increased immaturity – respiratory difficulties, hyperbilirubinemia, anemia at birth. The differences between infants born at 36 weeks and those born at 37 weeks gestation are very small compared to term infants.