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ABS 1

RISK FACTORS FOR CEREBRAL INJURY OF SURVIVORS AFTER SPONTANEOUS SINGLE FETAL DEMISE IN MONOCHORIONIC TWINS

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INTRODUCTION

Monochorionic (MC) twins are at increased risk of *in-utero* fetal death (IUFD), as a consequence of typical complications such as twin-to-twin transfusion syndrome (TTTS), selective intrauterine growth restriction (sIUGR) or even in absence of any evident cause. Single fetal demise exposes the co-twin survivor to exsanguination in the empty placental territory through vascular anastomoses, with a subsequent acute hypovolemia leading to anemia, which is responsible for multiorgan damage including cerebral injury, or death. It is assumed that the risk of cerebral injury in MC twins survivors after single IUFD is four times higher than in dichorionic ones. The aim of this study is to evaluate the incidence of cerebral injury in a large series of single twin survivors after spontaneous death of one twin, occurred in complicated or uncomplicated MC pregnancies, and to identify risk factors detectable at ultrasonography (US).

METHODS

We present a retrospective analysis of all MC pregnancies with single fetal demise diagnosed or referred to our centre from 2004 to 2015. Survivors were investigated with detailed US evaluation of intracranial anatomy, Doppler investigation of peak systolic velocity in the middle cerebral artery (MCA-PSV) and Magnetic Resonance (MR). Data on pregnancy characteristics, postnatal brain US scan, MR and neurologic follow up were collected.

RESULTS

A total of 78 MC pregnancies were analyzed. Median gestational age (GA) at single fetal demise was 22

weeks; median interval between single demise and live birth was 105 days, with a median GA at birth of 36 weeks. Prenatal MR was performed in 57 of 78 cases (73%). Cerebral injury affected 14/78 (18%) co-twins, 2 of which were born immediately after single demise, with postnatal diagnosis of cerebral injury. Among the other 12 fetuses that were studied before birth, 11 had a prenatal diagnosis of lesion with US and MR, and in one case an intraventricular hemorrhage grade III was described only after birth, that occurred at 25 weeks. The risk of cerebral injury was five-fold in fetuses with signs of anemia (MCA-PSV value above 1.55 MoM) and decreased with advancing GA.

CONCLUSIONS

Single fetal demise in MC twins is a severe event that can occur even in absence of any previous complication and exposes survivors to a risk of cerebral injury that can be diagnosed in prenatal life when referred to a tertiary center. Cerebral injury affects 18% of co-twin survivors after single fetal demise in MC twin pregnancies. MCA-PSV Doppler velocimetry, neurosonography and MR investigation seem to be a good predictor of cerebral injury. With signs of fetal anemia the pregnancy should be referred to a tertiary center for adequate management and counseling before any decision. When surviving fetuses are found to be free from cerebral injury, the risk of a poor postnatal outcome is significantly low when delivery is delayed.

ABS 2

PRENATAL DIAGNOSIS OF CORPUS CALLOSUM AGENESIS WITH ASSOCIATED INTERHEMISPHERIC CYSTS: LONG-TERM OUTCOME IN 23 CHILDREN

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INTRODUCTION

Agnesis (Ag) of Corpus Callosum (CC) is the most frequent brain malformation detected at fetal ultrasound (fUS) during second trimester. Parental counseling in these diagnosis is still difficult

especially when associated with interhemispheric cysts and gray matter anomalies, for the potential increased risk of hemiparesis and epilepsy (ranging from mild to severe clinical phenotypes). Objective: to describe postnatal outcome of CCAg and interhemispheric cysts detected during fetal life.

METHODS

We selected patients with CCAg (partial or complete) and interhemispheric cysts detected during fetal life from our imaging database of 378 patients with midline brain anomalies scanned at Gaslini Children Hospital from January 2005 to January 2017. Inclusion criteria were fetal US or MRI diagnosis and presence of all clinical and EEG data. Presence and location of gray matter anomalies such as polymicrogyria (PMG) or nodular heterotopia (NH) were recorded. Data on perinatal history, clinical symptoms, neurosurgical intervention, presence of other associated malformations or facial dimorphisms, neurological examination, developmental and cognitive outcome, psychiatry comorbidities, EEG pattern, age of onset of seizures (if present) with drug sensibility were reported. Genetic tests were mentioned when available.

RESULTS

Twenty-three patients (15 males, mean age at follow-up 10.7 ± 7.6 years) were selected. PMG was present in 16/23 (69%) and NH in 12/23 (52%). Three girls (3/23, 13%) received a clinical diagnosis of Aicardi syndrome with severe developmental delay/intellectual disability and drug resistant epilepsy. Excluding Aicardi phenotype, epilepsy was detected in 8/20 patients (40%), with drug response in all cases. In this group of 20 patients, male sex was more represented (12/20, 60%) and no major neurological defects were found. Developmental delay (both on motor and verbal aspects) was observed in all cases. Cognitive outcome at last follow-up was stratified as normal in 15/20 cases (75%), borderline IQ in 2/20 cases (10%), and mild intellectual disability in only 1/20 case (5%). Psychiatric data were recorded for 15/20 patients: hyperactivity and anxiety were frequent comorbidities (8/15 cases).

CONCLUSIONS

Excluding Aicardi syndrome, CCAg associated with interhemispheric cysts detected during fetal life may be associated with a good neurological outcome with borderline or normal cognition and no major neurological signs in the majority of patients. Despite the presence of EEG anomalies, the occurrence of epilepsy in these cases is rare and usually responsive to antiepileptic drugs.

ABS 3

A COMPARISON BETWEEN THE FETAL ABDOMINAL CIRCUMFERENCE DISTRIBUTION OF INTERGROWTH-21ST STANDARD VERSUS THE ITALIAN CUSTOMIZED FETAL GROWTH CHARTS IN DETECTING EARLY AND LATE ONSET SMALL FOR GESTATIONAL AGE INFANTS IN A HIGH-RISK POPULATION

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INTRODUCTION

To compare the fetal biometric distribution estimated by INTERGROWTH-21ST standard versus the Italian customized fetal growth charts (SIEOG), and to evaluate their impact in detecting early and late onset (> 32 weeks) SGA infants.

MATERIALS AND METHODS

A retrospective study was conducted between January 2013 and April 2016 on 160 consecutive cases of high risk patients seen at the Maternal-Fetal Medicine Unit, Department of Woman, Mother and Neonate, Buzzi Children's Hospital. Infants who had an ultrasound within 10 days before delivery were included. Abdominal circumference distribution estimated by INTERGROWTH-21ST and SIEOG was used to predict low neonatal weight after Z-score conversion. The SIEOG customized curves were resolved for the mean values of anthropometrical variables, including paternal height = 174 cm, maternal height = 162 cm, nulliparity = 68% and fetal gender = 50% male, that are the mean values of the demographic data of the population used to build up the INTERGROWTH-21th standard curves (SIEOG1). Finally, SIEOG AC growth curve was resolved using the actual patients' values of the above anthropometrical variables (SIEOG2). Low birth weight at delivery was diagnosed using customized neonatal weight charts. The percentage of SGA well classified cases of the three growth curves was compared by z-test for comparison of independent proportions using a z-score of -1.282 (10th centile) as cut-off.

RESULTS

From 22 to 40 weeks' gestation INTERGROWTH growth pattern was different when compared with SIEOG1 and SIEOG2 (p-value < 0.001). No difference was found between SIEOG1 and SIEOG2 abdominal circumference growth pattern. At delivery, there were 30.6% (49) of early onset SGA, 31.3% (50) of late onset SGA and 38.1% (61) AGA. The rate of well classified early SGA was 63.3% (31/49) and 71.4% (35/49) for INTERGROWTH and SIEOG (both SIEOG1 and SIEOG2), respectively (p-value = 0.400). The rate of well classified cases of late SGA was 70% (35/50) for INTERGROWTH, 68% (34/50) for SIEOG1 and 70% (35/50) for SIEOG2 (p-value = 0.83).

CONCLUSIONS

In our population of higher risk pregnancies, a difference in INTERGROWTH-21st and SIEOG abdominal circumference growth pattern from 22 to 40 weeks has been observed. SIEOG2 standard had a slight better performance for early onset SGA detection, however the difference is not significant and is included within the systematical error of weight estimation of the ultrasounds (about 20%) for the diagnosis of SGA infants.

ABS 4

UMBILICAL AND MIDDLE CEREBRAL ARTERY DOPPLER IN HYPERTENSIVE DISORDERS OF PREGNANCY: LOOKING BEYOND A NORMALLY GROWN FETUS

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INTRODUCTION

Hypertensive disorders of pregnancy (HDP) include gestational hypertension (GH), chronic hypertension (CH), preeclampsia (PE) and eclampsia with increasing associated maternal and perinatal morbidity and mortality. In the last decade, new insights into the diagnosis and management of fetal growth restricted (FGR) at more than 32-34 weeks are emerging: the concept that beside an apparently normal fetal growth an abnormal cerebroplacental (CPR) Doppler may suggest that there is suboptimal placental development and deprivation requiring

fetal adaptive mechanisms always leading to adverse perinatal outcome. The aim of the present study was to investigate whether the fetal Doppler findings could help to identify at later gestations HDP pregnancies that have signs of poor placentation despite a normal growth. Thus, we examined the umbilical artery (UA) and middle cerebral artery (MCA) Doppler in appropriate for gestational age (AGA) fetuses of healthy and HDP pregnancies at 32 weeks.

METHODS

A retrospective study was conducted on 75 pregnant women with HDP and 161 women with uncomplicated pregnancies as controls. UA and MCA pulsatility indexes (PI) were expressed as z-score while the CPR in MoM.

RESULTS

Similar results in UA PI and MCA PI z-scores and CPR MoM were found between the two populations. After dividing both groups according to the gestational age at the examination, no difference among cases and controls was detected at > 34 weeks, while at ≤ 34 weeks a significant statistically increase in the UA PI z-score (p = 0.004) with similar decreased CPR MoM (p = 0.008) was identified.

CONCLUSIONS

Our data support the increased body of evidence in literature that CPR Doppler may highlight a suboptimal placental functioning despite a normal fetal growth. In our population, this is evident in HDP pregnancies at ≤ 34 weeks where the Doppler examination could show fetal adaptive mechanisms before the fetal growth restriction become evident probably because the worsening maternal conditions mainly due to PE and CH lead earlier to delivery.

ABS 5

THE IMPACT OF MATERNAL OBESITY ON PLACENTAL MODIFICATIONS AND INTRA-UTERINE FETAL DEATH

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INTRODUCTION

The prevalence of obesity in women of childbearing age is dramatically increasing. Pre-pregnancy

obesity and excessive weight gain increase the risk of adverse perinatal outcomes, especially of intrauterine fetal death (IUFD) possibly related to placental structural changes. The aim of the study was to assess the correlation between obesity, placental findings and adverse perinatal outcomes.

METHODS

We randomly selected 116 patients with pre-pregnancy BMI ≥ 30 and singleton pregnancy who delivered at the Maternity Hospital of the University of Parma from April 2016 to March 2017. The following data were collected: birth weight, incidence of SGA or LGA, arterial and venous cord pH, adverse perinatal outcomes (admission to Neonatal Intensive Care Unit, IUFD, perinatal death). A group of non-obese patients who delivered in our Maternity Hospital and in the region Emilia Romagna across the same period were selected as controls. A single pathologist performed histological analysis of the placenta in accordance with the Amsterdam Consensus Statement classification. Placental findings were compared with the ones obtained from a non-consecutive series of placentae derived from a reporting population. Analyses of subgroups based on maternal age (30 years) and on pre-pregnancy BMI (< 35 , ≥ 35) were also performed.

RESULTS

The rate of intrauterine fetal death was significantly increased in the group of obese women (2.5% vs 0.3%; $p = 0.05$). The most part of placentae with malperfusion and delayed maturation were in the subgroup with BMI ≥ 35 . Using logistic regression analysis, we found that in women with BMI < 35 , the age ≤ 30 years protects from placental lesions (37% vs 66.7%; $p = 0.016$). In SGA neonates placental findings were always reported as abnormal; the frequency of lesions significantly decreases with increasing neonatal percentile of weight ($p = 0.012$).

CONCLUSIONS

Pregnancy in obese patients is significant related to the risk of intrauterine fetal death (eight times higher than in the non obese group, in our study). Malperfusion and delayed maturation are more frequent in the placentae of obese women. The occurrence of abnormal placental findings seems inversely related to the birthweight and directly related to the increasing BMI and maternal age.

ABS 6

FOUR CASES OF NEONATAL LIMB ISCHEMIA WITH DIFFERENT ETIOLOGY

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INTRODUCTION

Limb ischemia is a rare neonatal complication that can be the consequence of amniotic band syndrome (ABS) or can occur in monochorionic twins complicated by twin-to-twin transfusion syndrome (TTTS). We describe all cases observed in a population of pregnancies referred at our unit from 2004 to 2017. Part of this population was characterized by monochorionic diamniotic pregnancies complicated by TTTS defined by Quintero stage criteria, treated with fetoscopic laser surgery (FLS) from 16 to 26 weeks of gestational age.

CASES REPORT

On 5,180 single pregnancies referred to our unit from 2010 to 2016, there was only one case of ABS. A 25-year-old woman, gravida 1, was referred at 12 weeks of gestation with a wide amniochorial detachment and no sign of ABS. The pregnancy was followed up until 20 weeks when the lower left limb appeared involved to an amniotic band with edema but normal mobility. It was decided for an expectant management with an ultrasonographic follow up until 36 weeks when there was a deep vein thrombosis in the left lower limb of the pregnant woman. The baby was born with a cesarean section for this obstetrical complication at 39 weeks, with the birthweight of 2,895 g. The left foot was found normally ossified and oxygenated and the resolution of the band was performed in the first day of life. The right hand presented lack of distal phalanx of the IV finger and the III finger was edematous. Neonatal follow up is ongoing.

Out of the 444 FLS performed there were three single survivor twins born with limb ischemia detected only postnatally. In all TTTS twins integrity of four limbs was described with ultrasound performed before and 48 hours after laser when the patient was discharged and with MRI performed 2 weeks after the procedure. The limb ischemia affected one hand in two cases and one feet in one case: the extremity was found to be necrotic and underwent amputation in all cases.

CONCLUSIONS

Limb ischemia is a rare event, which can be either iatrogenic (monochorionic twin pregnancies complicated by TTTS and treated with FLS) or spontaneous (ABS). Due to rarity of the event prenatal identification is difficult: knowledge of the complications can address neonate to specific centre for delivery.

ABS 7

EFFECT OF POSITIVE URINE CULTURE AND VAGINAL SWAB ON THE EFFECTIVENESS OF PROGESTOGENS AS MAINTENANCE TOCOLYSIS: SECONDARY ANALYSIS OF THE PROTECT TRIAL

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INTRODUCTION

In a recently published RCT (PROTECT trial), we demonstrated that progestogens are not effective as maintenance tocolysis after threatened preterm labor (PTL), in women with short cervix. Moreover, a higher rate of preterm birth (PTB), borderline significant, was found in women treated with vaginal progesterone (P). Our aim is to verify if this finding is affected by other factors, namely by the presence of a urinary tract infection.

METHODS

This is a secondary analysis of the PROTECT trial. Women with singleton pregnancy with an arrested PTL between 22⁰⁷ and 31⁶⁷ weeks of gestation and cervical length < 25 mm were randomized to receive 17-hydroxyprogesterone caproate (17P), vaginal P or no treatment. Vaginal swabs and urine culture were collected at admission.

RESULTS

PTB did not differ significantly between groups: 17P 18/80 (23%), P 30/78 (39%), controls 17/77 (22%). Sixty-eight women treated with P had negative urine culture, and 26/68 (38.2%) had a PTB. In 17P (10/63, 15.9%) and control group (14/67, 20.9%) there was a lower rate of PTB in women with negative urine culture (P vs controls $p = 0.027$; 17P vs controls $p = 0.461$). In the whole population, women with both urine culture and vaginal swab positive had a higher rate of PTB (12/24, 50%) compared with women with at least one negative test (52/208, 25%, $p = 0.009$). In the 17P arm, women with both tests positive had a higher PTB rate (6/12, 50%) compared with those with at least one negative test (11/66, 16.7%, $p = 0.010$). No differences were observed in the control group (both tests positive 2/6, 33.3%, at least one test negative 15/71, 21.1%).

CONCLUSIONS

The higher rate of PTB found in women treated with P as maintenance tocolysis is not affected by a concomitant urinary tract infection. In the 17P arm urogenital tract infection may have influenced PTB rate.

ABS 8

REPLACING CONVENTIONAL G-BANDING KARYOTYPING BY ARRAY CGH IN A SELECTED FETAL POPULATION

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INTRODUCTION

The detection rate (DR) of pathogenic abnormalities, previously undetectable by conventional G-banded karyotype, has increased after the introduction of array comparative genomic hybridization (aCGH) into postnatal diagnostic testing. Therefore there is an increasing demand for the use of this technology in the prenatal setting and several groups have recommended the replacement of karyotyping with aCGH as a front-line prenatal test. However there is still a huge uncertainty about the kind of patient who could really benefit from this test. The purpose of our study was to evaluate the clinical implementation of aCGH in prenatal diagnosis, in a selected population.

METHODS

All patients performing an invasive test from June 2016 to December 2017 and presenting the inclusion criteria were enrolled in the study. aCGH testing was provided to all fetuses where conventional karyotyping by amniocentesis or chorionic villous sampling (CVS) was indicated, and quantitative fluorescent PCR (qfPCR) was normal, if: 1) one or more structural anomalies were identified on an ultrasound scan; 2) an isolated nuchal translucency [NT] ≥ 3.5 mm was found (crown-rump length within 45 and 84 mm). Exclusion criteria were: maternal age < 18 years. The samples were analyzed using the Agilent Human Genome CGH Microarray Kit 180KX4 (AMADID 022060), average spacing of 11-13 kb oligonucleotides and its relative software, the Agilent CytoGenomics Edition 3.0.6.6 (ADM-2 algorithm; hg19 release). Conventional G-banded karyotype was always performed as control.

RESULTS

Between June 2016 and December 2017, 340 invasive procedures were performed and 57 patients (50 amniocentesis and 7 chorionic villous sampling) presented the inclusion criteria for the study. There were 7% (4/57) samples with copy number variations (CNVs) detected by aCGH but not by conventional cytogenetics. One out of four cases (1.7%) was a CNV of unknown significance (VOUS) found to be *de novo*. In the remaining samples aCGH findings were concordant with conventional cytogenetic results. Therefore aCGH had an additional DR of 5.2% in our series.

CONCLUSIONS

This study indicates the ability of aCGH to identify chromosomal abnormalities, which cannot be detected during routine prenatal cytogenetic analysis. However because of the costs and because of the possibility of unclear results, we propose replacing conventional cytogenetics with aCGH only in selected cases, when a fetal abnormality or a NT above the 95th centile is found at US scan, after excluding common aneuploidies, and by qfPCR.

ABS 9

EARLY aEEG FINDINGS IN NEWBORNS TREATED WITH THERAPEUTIC HYPOTHERMIA FOR HYPOXIC-ISCHAEMIC ENCEPHALOPATHY PREDICTS NEURODEVELOPMENTAL OUTCOME AT 18 MONTHS

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INTRODUCTION

Therapeutic hypothermia (TH) is now a standard care for neuroprotection in neonates with moderate/severe hypoxic-ischemic encephalopathy (HIE). Amplitude integrated electroencephalography (aEEG) monitoring may help to evaluate changes in cerebral electrical activity during TH. Neurophysiological assessment seems to be most helpful during the first 24/48 hours after birth. Several studies indicated that aEEG is an excellent early predictor of neurological outcomes following HIE. Objectives: to evaluate the prognostic value of aEEG time course in asphyxiated cooled infants on the neurodevelopmental outcome at 18 months.

METHODS

14 term newborns admitted to our NICU with moderate-severe HIE underwent total body TH, within 6 hours from birth and continued for 72 hours. aEEG monitoring was started as soon as possible and maintained during the whole hypothermic treatment. Neurodevelopmental follow-up was scheduled at regular intervals up to 18 months.

RESULTS

6/14 (43%) presented minor neurological disability (motor impairment, global motor delay, moderate hemiplegia). In all cases the cerebral function monitoring (CFM) recruitment pattern did not normalize in the first 48 hours. The aEEG background pattern at 48 hours of life was abnormal in 7/14 newborns; only 2 of them developed an adverse outcome (severe cerebral palsy), while in 5 motor impairment and moderate hemiplegia were registered. In 7 infants the aEEG pattern was normalized during the first 48 hours of systemic hypothermia; out of these patients, 6 presented at 18 months a normal neurodevelopmental outcome, 1 global motor delay.

CONCLUSIONS

An abnormal 48-hours aEEG pathway is predictive of major neurological disabilities at 18/24 months of age. The early normalization of brain electrical activity within the first 48 hours is a good prognostic indicator of normal psychomotor development. The outcome of newborns with severe neonatal suffering is still one of the most difficult questions confronting the neonatologist. The analysis of the data at our disposal confirms the data already present in the literature about the positive correlation between the normalization of the aEEG pattern within

48 h from the beginning of hypothermia and the neurodevelopmental outcome at 18 months.

ABS 10

PREGNANCY OUTCOME IN GESTATIONAL HYPERTENSION: A SINGLE CENTER EXPERIENCE

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INTRODUCTION

Gestational hypertension (GH) remains a challenging diagnosis for the obstetricians since at first presentation of a new-onset high blood pressure after 20 weeks, it is difficult to know if a pregnant woman will develop preeclampsia (PE) or not. Aim of this retrospective study was to investigate pregnancy outcomes in singleton pregnancies complicated by GH in a tertiary referral Italian centre during the last four-year period; the rate of women who progress to PE and the maternal variables associated with the risk of progression were also analysed.

METHODS

A total of 514 pregnant women with diagnosis of GH at the admission were included. Among these women, two groups were identified: one without progression to PE (GH group, n = 454) and one with progression to PE (GHPE group, n = 60). In all cases, maternal age, parity, pre-conceptional BMI, mode of conception, number and type of antihypertensive therapies were recorded. Data on pregnancy outcome (gestational age at delivery, type of delivery, birth weight, birth weight percentile, Apgar at 1st and 5th minute) were collected from obstetric and neonatal records.

RESULTS

Among the 514 women affected by GH, 454 (88.3%) did not progress to PE, while 60 women developed PE. Then, in our series, the rate of progression from GH to PE was 11.7%. No difference in maternal age, parity and mode of conception was found between the two groups. A significant statistically difference in the maternal BMI was demonstrated between the two groups (GHPE 24.87 ± 6.42 vs GH 28.50 ± 7.57 , $p = 0.02$). Antihypertensive drugs were employed in 382 patients (74.3%) while 132

(25.7%) women maintained after the diagnosis a good blood pressure's control without therapies. In the treated group, the rate of progression was 14.7%; on the other hand, in the non-treated group the diagnosis of PE was made in 3% of cases. Regarding perinatal outcome, gestational age at delivery, mean birth weight and mean birth weight centile were significantly lower in pregnancies which progressed to PE. A cesarean section was performed in 93.3% of the patients in the GHPE group while in the GH group 53.1% of women experienced a cesarean section ($p < 0.0001$). Apgar score was lower both at 1st and 5th minute in the GHPE group in comparison to the GH one ($p = 0.001$). No difference in the rate of SGA neonates was demonstrated between the two groups ($p = 0.066$).

CONCLUSIONS

Our data confirmed that the worsening in perinatal outcomes observed in GH pregnancies is mainly due to the progression to PE in terms of duration of pregnancy, birth weight and Apgar scores. However, similar rate of SGA neonates was found. These observations added evidence that GH may share with PE similar maternal risk factors and neonatal outcomes. For these reasons, an accurate maternal and fetal monitoring is desirable in all pregnant women with a diagnosis of a new-onset raised blood pressure with and without sudden evidence of organ dysfunction.

ABS 11

THE ROLE OF OBESITY AND GESTATIONAL DIABETES ON PLACENTAL EFFICIENCY AND FETAL OXYGENATION

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INTRODUCTION

Maternal pregestational obesity is a significant risk factor for adverse pregnancy outcomes, such as gestational diabetes. Both these conditions can have an impact on placental development and affect maternal-fetal exchanges, compromising fetal metabolic status. The aim of the study is to investigate the influence of pre-pregnancy BMI on placental biometry and efficiency and to evaluate the role of gestational diabetes on fetal oxygenation in overweight and obese pregnant women.

METHODS

We enrolled 208 normal-weight (NW), 57 overweight (OW) and 69 obese (OB) women at the time of elective caesarean section. 10 OW pregnancies (18%) and 24 OB pregnancies (35%) were complicated by gestational diabetes (GDM). Maternal, fetal and placental data were collected. Respiratory gases, acid-base balance and lactate concentrations were measured in umbilical venous and arterial blood samples.

RESULTS

Gestational weight gain was significantly lower in OB women (NW = 12.99 ± 4.48 kg; OB = 8.03 ± 6.16 kg, $p < 0.001$) and within standard recommendations (IOM: 5-9 kg). OW mothers had a weight gain during pregnancy not significantly different from NW (OW = 12.11 ± 4.80), but they exceeded standard limits (IOM: 7-11.5 kg). We didn't find significant differences about gestational age, fetal weight and fetal biometry. Placental weights were significantly higher in OB pregnancies (NW = 457.67 ± 92.88 g; OB = 487.60 ± 92.81 g, $p < 0.05$), despite similar diameters and areas, and placental thickness was significantly higher in OB women, both with and without GDM (NW = 1.66 ± 0.32 cm; OB NON GDM = 1.94 ± 0.53 cm, $p < 0.01$; OB GDM = 2.00 ± 0.49 cm, $p < 0.01$). Significantly lower F/P weight ratios were found in GDM pregnancies, both OW and OB (NW = 7.42 ± 1.35 ; OW GDM = 6.39 ± 1.24 , $p < 0.05$; OB GDM = 6.45 ± 1.42 , $p < 0.05$). Fetuses from OB mothers were significantly more hypoxic and acidemic compared to NW fetuses (pO₂ UA: NW = 16.93 ± 8.63 mmHg; OB = 14.94 ± 7.83 mmHg, $p < 0.05$; lactate concentration UA: NW = 1.69 ± 0.49 mmol/L; OB = 1.99 ± 0.70 mmol/L, $p < 0.05$). Studying the effect of GDM, also fetuses from OW GDM women showed significantly lower values of pO₂ in umbilical artery (14.08 ± 3.18 mmHg, $p < 0.05$), and fetuses from OB GDM pregnancies the lowest pO₂ values (12.91 ± 7.00 mmHg, $p < 0.05$).

CONCLUSIONS

Our data show that women with an early nutritional and behavioral counseling, such as OB and GDM mothers, have a better metabolic control and an optimal growth environment for the fetus. We also found that placentas from OB and GDM pregnancies are heavier and thicker, suggesting that an unbalanced pregestational nutritional status can decrease the placental efficiency in maternal-fetal exchanges. Finally, fetuses from OB women are hypoxic and acidemic, while fetuses from GDM

mothers are hypoxic, reflecting that an altered pre-pregnancy BMI can affect fetal oxygenation, and GDM can further compromise placental efficiency.

ABS 12**A STRANGE CASE OF BIG PERINEAL MASS**

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INTRODUCTION

This is a case report of a rare finding of a perineal mass in a male fetus, which posed a dilemma for a differential diagnosis between accessory scrotum and congenital lipoma.

CASE REPORT

A male fetus at 21 gestational age was referred to our unit with a suspicion of sacrococcygeal teratoma. The first ultrasound examination showed a 15 x 7 mm subcutaneous mass located on the perineum behind the scrotum, without sign of vascularization, suggesting it was not a teratoma. No other anomalies were detected. This mass was echoic, looked like a second scrotum, so a differential diagnosis was put between accessory scrotum (AS) and congenital lipoma. The pregnancy was uneventful until the birth of a male of 4,000 g at 40 weeks of gestational age. There was no complication at birth, but the mass was removed one day after the birth, since there were signs of initial torsion. The mass was described as pedunculated, far one cm from the basis of the scrotum. The surgery was uneventful and the baby was discharged after 6 days. The histologic exam described a benign mature lipoma, with mature adipose cells surrounded by connective tissue and covered by normal skin. There was no cellular atypia. The diagnosis of AS was ruled out by the absence of any elements of the dartos fascia underneath the skin layer. Congenital perineal lipoma is extremely rare. There are 30 cases reported and to our knowledge this is the first case prenatally diagnosed.

These lesions are typically soft lobulated subcutaneous masses, round or pedunculated.

CONCLUSIONS

Lipomas are rare in infants, even more in fetuses. More than 80% of perineal lipomas occur with other anomalies, such as accessory scrotum. Moreover these lesions, like lipomas, may be associated with external genital and anorectal malformation. An isolated perineal mass is usually benign and the standard treatment is local excision, so the prenatal counselling can be reassuring. Complications such as torsion of the mass may occur and need emergent treatment. A complete evaluation of the urogenital and anorectal tract is recommended because of associated anomalies as renal agenesis, anorectal malformations, scrotum and penile anomalies.

ABS 13

GIANT MYOMAS AND PRETERM LABOR/ PRETERM BIRTH: IS MYOMECTOMY DURING PREGNANCY AN OPTION TO PREVENT THEM?

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INTRODUCTION

Uterine leiomyomas affect 0.1-3.9% of pregnancies and can cause spontaneous abortion, pPROM, preterm labour, placenta previa and peripartum hemorrhage. Major risks are related to number and size of fibroids and placental site. In case of preterm labor and preterm birth, it has been supposed that uterine fibroids are less distensible and there is a reported decrease in oxytocinase activity and higher concentrations of oxytocin. Management includes medical or surgical treatment. No clear guidelines are available for myomectomy during pregnancy. Some authors affirm that it should be avoided because of the significant risk of morbidity. A recent review reported 197 cases of myomectomy in pregnancy, included in 63 papers [1]. We report maternal and fetoneonatal outcome in 7 cases of successful myomectomy during pregnancy.

METHODS

In the last 3 years, we longitudinally evaluated 7 patients with large/giant uterine leiomyomas, diagnosed for the first time in pregnancy between week 10 and 17 of gestational age. Our cases included only singleton pregnancies affected by 1 or more fibroids measuring between 12 and 29 cm; 4 patients had a single myoma, 3 patients 2 or more. All myomas were subserosal with a large base of

implant. The site of myoma was right-lateral on the uterine wall in 4 cases, anterior in 1 case and left-lateral in 2 cases. In all cases we performed a laparotomic myomectomy at a gestational age between 13 weeks + 2 days and 17 weeks + 4 days.

RESULTS

We report successful surgical treatment, without fetal loss, premature delivery or maternal complications, standing for an overall positive outcome. Blood loss ranged between 200 and 450 cc, with no need for transfusions. All pregnancies continued uneventfully until delivery, performed in all cases via cesarean section, at 37 weeks gestational age in 1 case, 38 weeks in 1 case and 39 weeks in 5 cases. The weight of the newborns was ranging from 2,500 g and 3,450 g (median 3,183 g). Both pH and Apgar score were also within normal ranges. No congenital abnormalities were observed.

CONCLUSIONS

Myomectomy during pregnancy is still under debate with no published guidelines. In our experience, selected cases of uterine leiomyoma may be successfully managed surgically during pregnancy to prevent maternal and fetoneonatal complications such as preterm labor and/or delivery. Pre-operative detailed ultrasound evaluation is mandatory to determine the proper treatment in pregnancy, to enable a proper risk assessment and to plan a correct pre-operative mapping. According to the literature, our report suggests that myomectomy during pregnancy can be a therapeutic option in strictly selected cases complicated by large/giant myomas leading to a favorable maternal and fetoneonatal outcome.

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ABS 14

CAFFEY DISEASE: PRENATAL IDENTIFICATION OF A CASE

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INTRODUCTION

Caffey disease or cortical hyperostosis is a rare skeletal disorder that more commonly develops in childhood. The classical mild infantile form is characterized by cortical thickening of affected bones and acute inflammation of the contiguous soft tissues, generating redness of the limbs, pain, often with pseudoparalysis, irritability, and fever. The prenatal form of Caffey disease is rarely described: it has a more severe course characterized by extensive hyperostotic bone involvement, angulations and shortening of long bones, polyhydramnios, hepatomegaly and fetal hydrops and a high mortality rate due to prematurity and lung hypoplasia. We report a case of Caffey disease with prenatal occurrence.

CASE REPORT

A 34-year-old pregnant woman was referred to our centre at 22 weeks of gestation for polyhydramnios and shortened long bones. She had two previous pregnancies in North Africa complicated by polyhydramnios with adverse outcomes: the first pregnancy ended with premature delivery at 30 weeks with neonatal death, the second with intrauterine fetal death at 25 weeks. There was no other information about them. There was no consanguinity with the partner. The first ultrasound (US) evaluation in our centre showed a normal echogenicity of the cranial vault, normal interorbital distances, dysmorphic appearance of the lateral ventricles (LV), flat occiput, tight chest (CT/CA: 75%), short and thickened ribs, hypoplasia of scapulae and iliac bones, lumbosacral lordosis, prominent abdomen, short, thickened and arched long bones, long fingers, micrognathia (Jaw index 29), low implanted ears. Since abnormal LV was found, fetal MRI was performed at 22 weeks: it revealed enlarged subarachnoid spaces with thin cortex. For differential diagnosis with storage disease and skeletal dysplasia fetal blood sample: karyotype 46,XY, normal blood count, calcium 11.6 mg/dl, phosphates 7.7 mg/dl. Subsequent US follow up revealed lower CT/CA ratio (68%), and development of subcutaneous edema with progressive dilatation of the LV until 12 mm. At 30 weeks an intrauterine fetal death occurred (weight 1,844 g). Post mortem X-ray showed a symmetrical hyperostosis of the mandible, ribs, scapulae, ilea, and long bones.

CONCLUSIONS

Several sets of siblings have been described with this severe lethal form of Caffey disease and in these the inheritance may be autosomal recessive,

although germ line mosaicism is also possible. Dominant inheritance also occurs within the severe prenatal forms (mutation of *COL1A1*). With the help of the geneticist we have reconstructed the couple's genealogical tree and we found an autosomal recessive transmission; no genetic test is available and the phenotype is constantly severe. This case underlines the importance of teamwork to make a diagnosis, to define the risk of recurrence, to give a prognosis and opportunities for future pregnancies in respect of cultural diversity.

ABS 15

PSYCHOLOGICAL IMPACT OF MISCARRIAGE

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INTRODUCTION

Miscarriage is a frequent complication of early gestation. Till now its impact on mother wellbeing has not been thoroughly evaluated and studied. It is usual to give little importance to the psychological aspects of spontaneous abortion, since it is commonly thought that women who live this experience do not suffer, unlike what it is supposed for an intrauterine death that occurs in the last stages of pregnancy. Our aim was to investigate whether this event has a psychological impact on women.

METHODS

We performed a prospective study collecting 70 consecutive cases of miscarriage that were hospitalized in the Division of Obstetrics and Gynecology of the University of Cagliari. Patients gave their written consent to the study. Clinical characteristics were collected and every patient fulfilled a questionnaire during hospital admission, investigating anxiety and depressive factors. Statistical analysis of the collected data was performed.

RESULTS

Our study showed that 34.3% of the patients had high levels of anxiety and 10% had depression. Anxiety and depression symptoms were higher in women at first pregnancy or with previous unsuccessful gestations, and in older women. Most couples had been looking for pregnancy for some time; one of the couples had been looking for pregnancy for about 10 years.

CONCLUSIONS

Early miscarriage impact on women's psychological health should not be underestimated. Women looking for pregnancy for a long period or that were not able to have live babies in previous pregnancies tend to feel responsible and guilty, developing high levels of anxiety and depression. It is important to pay attention to these psychological aspects during the diagnosis communication and the follow-up. In this regard, the role of the midwife could become very important.

ABS 16

PSYCHOLOGICAL BURDEN OF ROUTINE ULTRASOUND: WOMEN'S ANXIETY ACROSS THE THREE TRIMESTERS OF PREGNANCY

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INTRODUCTION

The evaluation of the psychological burden during the prenatal diagnosis path, even in an uncomplicated pregnancy, and the analysis of factors that may contribute to a positive/negative experience of the women/couple still have many neglected areas. The aim of the study was to investigate the psychological impact of routine ultrasound (US) examination across the three trimesters of pregnancy.

METHODS

This is a prospective interventional study conducted from June 2016 to June 2017 in a single centre, IRCCS Burlo Garofolo, Trieste. Women attending the division of Fetal Medicine and Prenatal Diagnosis for routine-screening US examination in the three trimesters of pregnancy were recruited. The level of anxiety was assessed using the State-Trait anxiety inventory (STAI) through a questionnaire that was administered before and immediately after the US examination. The state anxiety (STAI-s) is the expression of the transitory unpleasant emotional response to a stressful situation, while trait anxiety (STAI-t) is the individual usual tendency to respond with anxiety to a stressful event. The study was approved by the local Ethical Committee.

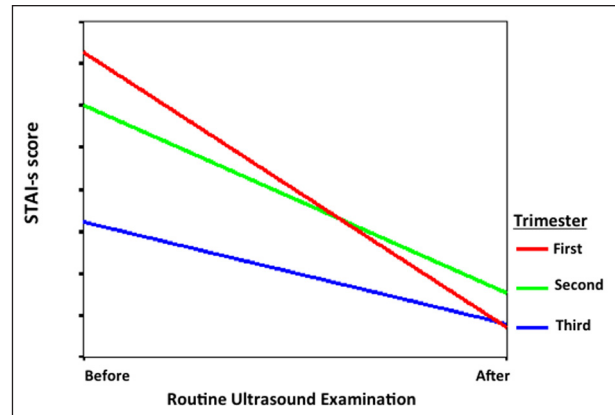


Figure 1 (ABS 16). The figure represents the STAI-s in the three trimesters of pregnancy, before and after the ultrasound examination.

RESULTS

Overall, 285 women were recruited (95, 93 and 97 in the I, II and III trimester, respectively). Before US examination, both STAI-s and STAI-t resulted clinically relevant in 29.5% and 26.7% of patients, respectively, with highest proportion for STAI-s in the first trimester (33.7%) and for STAI-t equally distributed in the second and third trimester (33.3% and 30.9%). In all cases the level of anxiety decreased significantly after the exam ($p < 0.001$) with a more relevant reduction in subjects with a higher STAI-t before test (**Fig. 1**). A gradual decrease in the STAI-s before examination was seen across the three trimesters, with a significantly higher score in the first trimester ($p = 0.017$; **Fig. 1**).

CONCLUSIONS

The results of our study show that pregnant women are susceptible to high level of anxiety (STAI-t), and that routine ultrasound examination across the three trimesters of pregnancy can generate clinically significant state anxiety. Moreover, contrary to what we were expecting (the highest levels of state anxiety in occasion of the second trimester anomaly scan), it seems that women experience the highest state anxiety before the first trimester ultrasound. These data highlight that care of the mother undergoing routine ultrasound examination should not focus exclusively on detection of fetal abnormality and wellbeing, and might be useful in improving our approach to the patient.

ABS 17

IMMIGRATION AND PREGNANCY OUTCOME: DISPARITIES IN A SELECTED AFRICAN POPULATION

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INTRODUCTION

Social integration of the migrant woman is hard to achieve in the receiving country and the pregnant state may as well be in jeopardy due to the unfavourable condition. There is evidence of major differences in perinatal outcome: pregnant women of selected ethnic groups face higher obstetric risk in comparison with native Italian women and other immigrant women. Results from previous studies support the idea that Sub-Saharan African immigrant women form a group more often prone to adverse pregnancy outcome. This study searches for health inequalities by comparing a group of African women and a native population based on relevant indicators of maternal-fetal wellbeing.

METHODS

This is an observational retrospective study comparing relevant perinatal indicators in two groups of pregnant patients giving birth at the Obstetrics Department of the University Hospital of Verona: a sample of 309 women of Nigerian origin and a control group of 5,255 Italian women. Selected indicators were: maternal age at delivery, parity, rates of preterm birth, rates of low birth weight (< 2,500 g), mode of delivery, cesarean section during labor, Apgar score < 7 at 5', neonatal metabolic dysfunction (pH < 7.05 and BD \geq 12 in the umbilical artery), stillbirths, perineal tears. Twin pregnancies and higher order multiple gestations were excluded to avoid the bias due to their impact on birth weight and gestational age at delivery. Data were collected using Microsoft® Office Access® 2003 software and analyzed with the Excel® 2007 program. Crude odds ratios with 95% confidence intervals were calculated according to Cornfield and Fisher exact tests. Statistical significance was set at $p < 0.05$. For comparison of means the Student t test and the Mann Whitney test were utilized.

RESULTS

Nigerian women were overall younger and of higher parity; they carried a significantly greater risk of preterm delivery, including births at very low gestational ages (less than 32 weeks). Indicators of fetal distress such as low Apgar score or fetal acidosis were not significantly higher but stillbirths occurred significantly more often. Mode of delivery

was more frequently a cesarean section, either before or during labor, although the two groups shared the same rate of operative delivery. Damage to the genital tract in terms of vaginal tears compared favorably and reduced rates of episiotomy were also found resulting in a overall higher percentage of perineal integrity in the immigrant group.

CONCLUSIONS

According to our results, the Sub-Saharan African group showed an association with several adverse pregnancy outcomes. We share the opinion of other Authors that a direct correlation exists between the degree of social integration and the immigrant's health: for women, a good integration may have a protective effect upon perinatal health. Therefore adequate antenatal and intrapartum care should be implemented to improve the obstetric outcome of groups at higher risk.

ABS 18

PRETERM BIRTH RISK AND IMMIGRATION: THE EXPERIENCE OF AN ITALIAN HOSPITAL

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INTRODUCTION

Immigration in Italy is an important and widespread phenomenon. The number of newborns from migrant parents has progressively increased in the last twenty years. Problems related to mother and child health are frequent. The aim of this study was to describe the characteristics of preterm infants of foreign mothers, and to compare them with those of native mothers.

METHODS

All newborns born in the Neonatology Unit of Hospital of Cosenza, Italy, between January 2016 and December 2017 were included (4,284 newborns). Pregnant immigrant women were classified in three regions (Eastern Europe, Africa, and Asia). Preterm birth (< 37 weeks) and preterm-small for gestational age (SGA) data were collected as neonatal morbidity variables. Gestational age was measured in weeks and this value was used to define the main study parameters: very preterm (VPT) (GA \leq 32 weeks) and moderate-to-late preterm (MLPT) (GA < 37 weeks). Among these were identified SGA newborns (defined as a weight below the 10th percentile for the gestational age).

RESULTS

There were 3,925 native newborns and 358 (8.3%) with immigrant origin for a total of 4,283 newborns. Of the total, 654 newborns (15%) were preterm: 158 (3.7%) VPT and 496 (11.5%) MLPT. Among foreign babies were identified 212 (59%) newborns from Eastern Europe, 114 (31%) newborns from Africa, 32 newborns (8%) from Asia. The distribution of foreign preterm newborn infants was as follows: 5.2% VP and 14% MLPT African newborns; 4.7% VPT and 13.6% MLPT Eastern Europe newborns; 6.2% PT and 25% MPLT Asiatic newborns; 3.5% VPT and 11.2% MLPT Italian newborns. SGA newborns: 14% African babies, 20% Asian babies, 12.8% Eastern Europe babies and 12% Italian babies. Infants of immigrated parents showed higher incidences of prematurity and low birth weight for gestational age. The study showed a higher risk in Asians and Africans while women from Eastern Europe had a similar rate to Italians.

CONCLUSION

The percentages of preterm infant (both VPT and MLPT) were higher among immigrants than Italian newborns. Among ethnic groups, being of Asia or Africa origin was positively associated with adverse perinatal outcomes. This finding may be due to a higher incidence of maternal disease and genetic difference. In addition cultural reason, poor living conditions, less frequent prenatal care may explain these results. Strategies to improve prenatal care among immigrant women should be implemented to reduce fetal morbidities.

ABS 19

PRIMARY LYMPHEDEMA AND PREGNANCY: FETO-NEONATAL AND MATERNAL OUTCOME

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INTRODUCTION

Primary lymphedema is a chronic condition characterized by an excessive accumulation of protein-rich fluid, classified in congenital, praecox and tarda. Literature is poor in data concerning primary lymphedema in pregnancy. We report a case.

CASE REPORT

A 39-year-old pregnant woman affected by grade II primary lymphedema showed post partum acute dyspnea, bilateral thoracic effusion of 7-8 cm, anuria, mild heart failure, massive edema. At week 37 labor was induced due to pPROM and an emergency cesarean section was performed because of a non-reassuring CTG. A 2,975 g female was born showing persistent cutis marmorata without hydrops, edema or other congenital abnormalities. The pregnant woman was born prematurely with congenital hydrops caused by primary lymphedema. Genetic analysis found punctiform variations on *CELSRI* gene, with missense mutation of the coded protein. The patient was at her first spontaneous pregnancy and showed bilateral swelling of upper and lower limbs, treated with conservative methods such as compressive garments and physical therapy. Symptoms were exacerbated by pregnancy and at week 33 lymphedema worsened to grade III, despite bandaging, and affected also the vulvar area. Hepatosis occurred at 35 GA. Hypertensive disorders and diabetes were not found. Fetal anatomy and growth were found within normal ranges, although nuchal translucency was 2.9 mm with low risk cfDNA. Invasive prenatal tests were not sought by the parents. The post partum period required treatment with furosemide and enoxaparin sodium. Improvements were already observed after 48 h and after one week the thoracic effusion partially resolved, disappearing completely after 1 month. Both vulvar and limbs edema were treated also with manual lymphatic drainage. The neonate was closely observed and tests ruled out sepsis, hypothyroidism, genetic abnormalities and congenital malformations.

CONCLUSIONS

Scientific literature is very poor. Brunner studied the effects of pregnancy on primary lymphedema affected women, but no published cases were found concerning maternal, fetal and neonatal outcome. Primary lymphedema is not an absolute contraindication to pregnancy. Preconceptional counseling is based on maternal genetic data and properly treated lymphedema. During pregnancy therapeutic routine should be continued to avoid worsening of symptoms and maternal cardiovascular activity should be closely monitored. In puerperium attention should be given to avoid any delay or lack of therapy. Preventive measures are strongly recommended, including compressive garments, physical therapy, drainage therapy, and pharmacological therapy. Because of

the increased risks, it is suggested to perform fetal nuchal translucency, advanced ultrasound scans and to offer genetic prenatal diagnosis. This is the first case published and others study are needed.

ABS 20

A CASE REPORT OF ISOLATED PLACENTAL MESENCHYMAL DYSPLASIA WITH NORMAL FETAL GROWTH

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INTRODUCTION

Placental mesenchymal dysplasia (PMD) is a rare vascular anomaly of the placenta with estimated incidence of 0.02%, characterized by placentomegaly and vesicular appearance. PMD is often associated with intrauterine growth restriction (IUGR, 48%), Beckwith Wiedemann syndrome (BWS, 15%), intrauterine fetal death (IUFD, 12%) and female gender.

CASE REPORT

We report a case of a 40-year-old patient, gravida 3, para 2, who was referred to our Centre at 17 weeks of gestation for a suspicion of partial mole. We performed ultrasonographic evaluation of fetal growth and anatomy, maternal-fetal Doppler velocimetry that were normal. A placentomegaly, and vesicular appearance of a part of the placenta were found. It was postulated the hypothesis of a pregnancy initiated as twins DZ, and that a fertilization hesitated in complete hydatidiform mole and the other in a normal twin. An amniocentesis for fetal karyotype and dosage of maternal β -human chorionic gonadotropin (β -HCG) and α -fetoprotein (α -FP) levels was performed. Serial fetal evaluation revealed regular growth, normal anatomy and normal Doppler velocimetry of umbilical artery and uterine artery. Fetal karyotype was normal (46,XX), β -HCG and α -FP levels were normal. The patient was admitted at 36 weeks for premature rupture of membrane. She progressed to a cesarean section delivery of a 2,340 g female neonate in breech presentation. The placenta was sent to pathology and genetics for examination. The results

were normal karyotype (46,XX) and histological diagnosis of mesenchymal dysplasia was made. An indication was given to neonatal genetic analysis for BWS and abdomen ultrasound: the first was negative, the second revealed the presence of two liver lesions, which were studied with computed tomography scan. These lesions were surgically removed with histological diagnosis of infantile hemangioendothelioma. Perinatal identification of PMD should include a differential diagnosis of partial hydatidiform mole, complete hydatidiform mole and recurrent hydatidiform mole. PMD differs from the partial mole because it does not show proliferation of the trophoblast.

CONCLUSIONS

The increased frequency of PMD in BWS and in the female sex has led to the hypothesis that the genes involved (*VEGF-D* and *IGF-2*) can be related to the BWS complex (11p15.5) or to the X chromosome. Etiology is still unknown, while association with IUGR and IUFD is high. In presence of pathological placenta and regular ultrasound parameters it is necessary to acquire the karyotype and exclude the BWS, to sonographically monitor the pregnancy, and to report the possible association with childhood cancers.

ABS 21

PRENATAL DIAGNOSIS OF A CASE OF DYSEGMENTAL DYSPLASIA

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INTRODUCTION

Dyssegmental dysplasia (DD) is a rare autosomal recessive condition first reported in 1969 by Silverman. Two forms of the condition have been identified: the severe DD, Silverman-Handmaker (DD-SH) type and the milder DD, Rolland-Desbuquois (DD-RD) type. Prenatal Diagnosis of these conditions has been rarely reported.

CASE REPORT

A 23-year-old, gravida 1, from North Africa was referred to our unit for a genetic counselling as a consequence of consanguinity. Since there

were not other identified risk factors she was referred for an ultrasound screening at 20 weeks. The ultrasound scan performed showed multiple vertebral segmentation abnormalities, markedly shortened bowed long bones, a small fetal chest with short ribs, microretrognathia (jaw-index 23%), all findings consistent with lethal skeletal dysplasia. An amniocentesis was performed to obtain FISH, karyotype, array CGH analysis that were normal and to storage fetal DNA. The couple has been informed, also with a genetic consultation, regarding the poor prognosis and decided to terminate the pregnancy at 21 weeks. Post Mortem X-ray and computed tomography scan showed poorly ossified and short head bones and iliac bodies, poorly ossified lumbar and chest vertebral bodies, which were irregular in size and shape and absence of cervical vertebral bodies. The chest was small with horizontally oriented ribs. The long bones were markedly shortened with dumbbell shape. All these findings are consistent with a particular and severe skeletal dysplasia: DD. On the DNA stored molecular genetics analysis of the heparan sulphate perlecan gene 2 (*HSPG2*) gene showed a new variant, c.[3888+1G>A], p [?], detected in homozygosity that confirmed the suspicious of DD-SH type. The same variant was detected in heterozygosity in the *HSPG2* gene of both parents.

CONCLUSIONS

These short-limbed skeletal dysplasias are characterized by the differences in the size and in the shape of the vertebral bodies resulting in disorganization of the axial spine. The SH subtype is an autosomal recessive caused by mutations in *HSPG2*. This gene encodes the perlecan protein, abnormalities of which lead to disordered signaling and abnormal cartilage development. The combination of fetal ultrasound and molecular analysis can help in making a diagnosis in a family with no known history of the condition. In view of the autosomal recessive mode of inheritance, the parents are at a one in four risk of recurrence for any further offspring. DD is diagnosable antenatally by ultrasonic recognition of the severe vertebral changes possibly as early as the first trimester Surveillance of future pregnancies using this technique and chorionic villi sample has been offered to the parents.

ABS 22

WEIGHT DISCORDANCE AND PERINATAL MORBIDITY IN TWINS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION

Birth weight (BW) discordance is one of the major issues of perinatal outcome in twin pregnancies, regardless of chorionicity. Recently, both dichorionic (DC) and monochorionic (MC) twin pregnancies, discordant for fetal growth, have been reported to be at higher risk of intrauterine death (IUD). The aim of this study was to evaluate the relationship between BW discordance and perinatal morbidity in twin pregnancies.

METHODS

Medline, Embase, Cinahl and Clinicaltrials.gov databases were searched. Only studies reporting the occurrence of morbidity in twin pregnancies affected compared to those not affected by BW discordance were included. The analysis was stratified according to different types of morbidity (respiratory, neurological, infectious, admission to neonatal intensive care unit and necrotizing enterocolitis). Furthermore, a composite score including the occurrence of at least one of the observed outcome in twins affected compared to those not affected by BW discordance was computed. The weight discordance cut-offs considered were $\geq 15\%$, $\geq 20\%$, $\geq 25\%$, $\geq 30\%$. Meta-analyses using individual data random-effect logistic regression and meta-analyses of proportion were used to analyze the data.

RESULTS

Twenty-two studies including 8,932 twin pregnancies were included. Overall twins with BW discordance $\geq 20\%$ had an increased risk of morbidity (OR: 1.80; 95% CI 1.5-2.2). Growth discordant twins had an increased risk of severe neurological morbidity (OR: 2.0; 95% CI 1.9-2.3), and the overall risk of morbidity was higher, compared to those with less degree of growth discrepancy (OR: 2.4; 95% CI 1.9-3.1). Twins with BW discordance $\geq 25\%$ had an increased risk of severe neurological morbidity (OR: 2.4; 95% CI 1.3-2.7), pH < 7.2 (OR: 2.2; 95% CI 1.8-3.4), admission to NICU (OR: 2.9; 95% CI 2.0-3.8), but not respiratory morbidity (p = 0.629), NEC (p = 0.827) and infectious morbidity (p = 0.243).

CONCLUSIONS

BW discordance is associated with perinatal morbidity in twin pregnancies. The strength of association between BW discordance and morbidity in twins increases with increasing the cut-off of discordance and it is mainly related to neurological events and abnormal acid-base status.

ABS 23**A SINGLE CENTRE OBSERVATIONAL STUDY ON INTRAHEPATIC CHOLESTASIS OF PREGNANCY: SHORT AND LONG TERM OUTCOMES**

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INTRODUCTION

Intrahepatic cholestasis (IC) is the most frequent liver disorders of pregnancy, characterized by maternal pruritus and elevated serum bile acid levels. It is often associated with other signs of hepatic dysfunction. The primary objective of our study was to determine the incidence and the maternal and fetal outcomes in the short- and long-term follow up.

METHODS

A retrospective observational study was conducted at the Obstetrics and Gynecology Unit of the University Hospital "G. Martino" of Messina, in the period between January 1, 2010 and December 31, 2016. All pregnant women with a diagnosis of IC were included. As a standard protocol, all admitted patients signed an informed consent for data collection for research purposes. The study was approved by the local ethics committee. Data of women with a physiological pregnancy, who gave birth in the same period, were collected for a control group. All the patients with IC included in the study were contacted and a clinical reevaluation was proposed at the Hepatology Unit (ultrasound and elastographic examination of the liver) in order to exclude hepatic diseases.

RESULTS

During the study period, 8,179 patients delivered at the Gynecology and Obstetrics Unit. Fifty patients

were admitted with a diagnosis of IC (0.61%) and were included in the study. The trend was mostly constant. Only two patients (4%) referred an episode of cholestasis in the previous pregnancy. The age was significantly higher in the group of patients with IC ($p = 0.001$). These women were also more affected by Hashimoto's thyroiditis and thrombophilia ($p = 0.064$) and reported a significantly increased risk of gestational hypertension ($p = 0.009$). Moreover, pregnant women with IC, compared to the control group, showed an increased risk of preterm births (> 32 weeks), a neonatal weight significantly lower ($p = 0.018$) but without serious pathology in the neonatal outcome. The therapy significantly decreased pruritus, GOT and GPT values. Pregnant women had a physiological course of puerperium, except one case of HELLP Syndrome. All the patients, reevaluated in the long-term follow up (range 2-7 years), did not report hepatic alterations.

CONCLUSIONS

Our data show a benign evolution of pregnancy and puerperium in the women affected by IC, probably linked to an early diagnosis and administration of therapy. It is necessary to offer a timely diagnostic and therapeutic approach to reduce adverse events at birth and prevent long-term complication in the mother.

ABS 24**MYO-INOSITOL SUPPLEMENTATION TO PREVENT GESTATIONAL DIABETES AND EFFECT ON BIOELECTRICAL IMPEDANCE ANALYSIS IN OVERWEIGHT NON-OBESE WOMEN: A RANDOMIZED PLACEBO-CONTROLLED TRIAL**

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INTRODUCTION

Maternal body composition undergoes deep adaptive changes during pregnancy, especially in many pathological conditions, such as gestational diabetes mellitus (GDM). This study aims to evaluate whether myo-inositol supplementation may change body composition and may reduce incidence of GDM in overweight non-obese women.

METHODS

This is an interim analysis of randomized placebo-controlled trial. Women were randomly assigned

into 1:1 ratio in either myo-inositol group (myo-inositol 2 g plus 200 µg folic acid twice a day) or placebo group (200 µg folic acid twice a day). Body composition (evaluated by Bioelectrical Impedance Analysis) and incidence of GDM were assessed at different gestational age cut-offs (T0: 12th-13th w, T1: 26th-27th w, T2: 31st-32nd w, T3: 3 w after delivery).

RESULTS

From April 2016 to July 2017, 140 pregnant women were enrolled and analysed. 70 women were included into the myo-inositol group and 70 into the placebo group. At T2 women who received placebo had a significant reduction in the fat free mass/fat mass ratio (FFM/FM) (1.84 ± 0.51 vs 2.16 ± 0.45) ($p = 0.00006$), and an increase ($p = 1.7 \times 10^{-13}$) of extracellular water (19.02 ± 2.20 vs 16.08 ± 2.09) compared to those who received myo-inositol. The incidence of GDM was reduced in the myo-inositol group ($n = 6$, 9%) compared with the placebo group ($n = 16$, 23%) ($p = 0.2$). After adjustment for confounding factors, myo-inositol treatment was associated with a reduction in the risk of GDM development (OR 4.6, 95% CI 0.02 to 90.8).

CONCLUSIONS

Myo-inositol supplementation may reduce the incidence of GDM in overweight non-obese women. It could also contribute to a greater increase of fat free mass than fat mass and to a lower increase of extracellular water.

ABS 25

BREAST MILK FOR TWINS: MORE PROTEINS, LESS LACTOSE

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INTRODUCTION

Currently, there is a lack of studies analyzing the composition of milk from mothers of preterm and low-birth-weight twins. Similarly, there are no studies comparing the composition of mother's milk between twins and singletons. Aim: the aim

of this study is to measure the composition of mother's milk in a population of preterm and low-birth-weight twins, and to evaluate factors (such as gestational age, birth weight, IUGR, number of newborns, gender discordance between twins) that could influence its composition. Moreover this study aims to verify if twin birth could influence the composition of mother's milk.

PATIENTS AND METHODS

The studied population consisted of 51 twins (25 males and 26 females), with mean gestational age 28.9 ± 2.5 weeks and mean birth weight $1,076 \pm 318$ g. A group of 28 preterm singletons (13 males and 15 females), with a mean gestational age of 26.3 ± 1.5 weeks and a mean birth weight of 816 ± 168 g was also included in the study, in order to compare the characteristics of maternal milk from these two groups. The milk was analysed by near-infrared (NIR) spectroscopy. The results were submitted to statistical analysis: we considered significant the results with p -value < 0.05 .

RESULTS

The milk from mothers of twins with $GA \leq 28$ weeks showed a significant difference in protein content compared to the milk from mothers of twins with $GA > 28$ weeks (1.67 ± 0.15 g/100 ml vs 1.57 ± 0.2 g/100 ml; $p = 0.02$). Gestational age did not influence other nutrients concentration (lipids and lactose) in maternal milk, nor its nutritional value. No other factors significantly modified the milk composition. Finally, focusing on the newborns with $GA \leq 28$ weeks, maternal milk from twins and singletons showed a significant difference: the milk from mothers of twins is richer in proteins (1.53 ± 0.29 g/100 ml vs 1.29 ± 0.23 g/100 ml; $p < 0.01$) and poorer in lactose (6.34 ± 0.2 g/100 ml vs 6.72 ± 0.24 g/100 ml; $p = 0.02$).

CONCLUSIONS

Based on the collected data, we can state that the milk from mothers of extremely preterm and low-birth-weight twins shows significant differences compared to the milk from mothers of low-birth-weight singletons. Moreover, considering the twin population, maternal milk's protein content is inversely related to gestational age. The other factors considered did not influence maternal milk composition.