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ABS 1**MANAGEMENT OF PATENT DUCTUS ARTERIOSUS IN TWO TERTIARY NEONATAL UNITS**

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INTRODUCTION

Treatment of Patent Ductus Arteriosus (PDA) remains a conundrum for neonatologists. Currently ibuprofen is the only pharmaco-therapeutic option for treatment.

AIM

To review outcomes of babies under 32 weeks gestation with a PDA treated with ibuprofen in two neonatal intensive care units in the UK.

METHODS

Babies under 32 weeks' gestation with a PDA, treated with ibuprofen at two tertiary neonatal units were identified through the Badger electronic patient record. Data was collected retrospectively over a 30-month period from 1st January 2013 to 30th June 2015.

RESULTS

A total of 86 babies were identified who had their PDAs treated with ibuprofen. The decision to treat was consultant led and taken after clinical and echocardiographic assessment. The mean gestation age was 25 weeks and the mean birth weight was 791 grams. All patients were treated within 28 days of life. 59 babies (68.6%) received at least a single course of ibuprofen. 4 babies (4.4%) received a second course. 13 babies (15%) had surgical ligation despite medical treatment with ibuprofen.

CONCLUSIONS

The decision whether to treat PDAs remains a challenge for neonatologists. Currently ibuprofen is the only pharmaco-therapeutic option for treatment. The timing and response to treatment varied in our experience. A randomised controlled trial such as Baby-OSCAR which is studying the benefits of screening and treating a haemodynamically significant PDA with ibuprofen versus placebo, would hopefully resolve this conundrum.

ABS 2**NT-PROBNP LEVELS AT 48-96 HOURS OF LIFE CAN PREDICT THE NEED FOR TREATMENT OF A HEMODYNAMICALLY SIGNIFICANT PATENT DUCTUS ARTERIOSUS IN VERY LOW-BIRTH-WEIGHT INFANTS**

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INTRODUCTION

A hemodynamically significant patent ductus arteriosus (HsPDA) in premature infants is associated with significant morbidity. The usual way to assess this hemodynamic significance is by ultrasonography, but this technique is not completely objective, it could be a stressful and long exploration in a preterm baby, it is not always available and the criteria for defining a HsPDA are not standardized. For these reasons, brain natriuretic peptides are acquiring an increasing importance in the diagnosis of HsPDA. We report a blinded, prospective study of the diagnostic utility of N-terminal pro-brain natriuretic peptide (NTproBNP) measurements for predicting not only HsPDA but also the need for treatment.

METHODS

All preterm neonates < 32 weeks admitted to our NICU from November 2012 to December 2015 were evaluated at 48-96 hours of life by ultrasonography by an operator blinded to NTproBNP concentration, measured at same time. Decisions of treatment were taken by NICU staff, who was aware of the ultrasound results, but blinded to NTproBNP levels, following our regular protocol.

RESULTS

Eighty-nine babies with mean gestational age of 29⁺⁴ weeks were included. NT-proBNP levels were significantly higher in the treated group (n = 25) with a mean ± SEM of 28,480 ± 3,190 compared to 7,046 ± 332 in the non treated group (n = 64). 9,500 pmol/L had diagnostic sensitivity of 96% and specificity of 90% (95%; CI: 68-99) for need of treatment, with an area under receiver operating characteristic (ROC) curves of 0.897.

CONCLUSIONS

NTproBNP levels at 48-96 hours of life predicted whether a neonatal physician blinded to results would treat a PDA with a high sensitivity and specificity.

ABS 3**THE ASSOCIATION BETWEEN NIRS AND DOPPLER ULTRASONOGRAPHY IN PRETERM INFANTS**

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INTRODUCTION

Near-infrared spectroscopy (NIRS) is a non-invasive technology that measures tissue oxygen saturation based on the assessment of oxygenated and deoxygenated hemoglobin. We aimed to determine if NIRS, which is easier to obtain than Doppler ultrasonography (USG), can be used instead of Doppler USG to assess organ blood flow in infants less than 32 weeks of gestational age who had a hemodynamically significant patent ductus arteriosus (PDA).

METHODS

Thirty-one infants who were treated with ibuprofen for closure of PDA were monitored continuously with NIRS. Cerebral, mesenteric, and renal arterial blood flow velocities were measured with Doppler USG before and after the treatment.

RESULTS

While cerebral, mesenteric, and renal fractional oxygen extraction (FOE) measurements decreased significantly ($p = 0.042$, $p < 0.001$, $p < 0.001$, respectively), NIRS measurements ($p = 0.016$, $p < 0.001$, $p < 0.001$, respectively) and mean blood flow velocities ($p = 0.003$, $p = 0.011$, $p = 0.002$, respectively) increased significantly after the treatment. There was a significant correlation between pretreatment cerebral and mesenteric FOE and resistive index (RI) values ($r = 0.45$,

$p = 0.01$, and $r = 0.46$, $p = 0.01$, respectively). However, no correlation was observed between renal FOE values and renal RI ($r = 0.33$, $p = 0.06$). Posttreatment cerebral, renal, and mesenteric FOE values correlated positively with corresponding RI ($r = 0.41$, $p = 0.02$; $r = 0.39$, $p = 0.02$; $r = 0.65$, $p < 0.01$; respectively). Pretreatment and posttreatment cerebral, mesenteric, and renal FOE values and arterial mean velocities were inversely correlated (pretreatment: $r = 0.69$, $p < 0.01$; $r = 0.72$, $p < 0.01$; $r = 0.77$, $p < 0.01$; post treatment: $r = 0.54$, $p = 0.01$; $r = 0.69$, $p < 0.01$; $r = 0.38$, $p = 0.01$; respectively).

CONCLUSIONS

As Doppler and NIRS measurements correlated significantly, it can be concluded that NIRS can be used in monitoring organ blood flow in infants with PDA, which may contribute to the management of this condition.

ABS 4**CARDIOVASCULAR RISK: SCHEDULED OR NOT?**

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INTRODUCTION

Fetal cardiovascular system is sensitive to poor maternal nutritional conditions during the periconceptional period. We postulated that fetal growth restriction (FGR) is associated with cardiovascular changes detectable at birth that could predict cardiovascular outcomes in adulthood.

METHODS

Functional echocardiography in the second-third day of life (May 2015-August 2015) was performed. For the assessment of the right ventricle function we choose the tricuspid annulus plane systolic excursion (TAPSE) and Tei index. The systolic left ventricle (LV) function was obtained with the telediastolic diameter and ejection fraction (LVTDD, EF); the longitudinal function with the mitral annulus plane systolic excursion (MAPSE); and the global function with the LV Tei index.

RESULTS

Four hundred and ten patients ($n = 410$) with structurally normal hearts were prospectively examined. Neonates with FGR ($n = 25$) exhibit

significantly worse longitudinal function of both ventricles, and worse radial and global function of the left ventricle: TAPSE (mean \pm SD: 7.54 ± 1.35 mm vs. 9.07 ± 1.28 mm, $p < 0.001$), LVTDD (mean \pm SD: 14.54 ± 1.74 mm vs. 16.96 ± 1.81 mm, $p < 0.001$), MAPSE (mean \pm SD: 5.24 ± 0.85 mm vs. 6.16 ± 0.86 mm, $p < 0.001$) and LV Tei index (mean \pm SD: 0.76 ± 0.26 vs. 0.60 ± 0.22 , $p = 0.003$). Tobacco was related with lower LVTDD: 16.05 ± 1.76 mm vs. 16.87 ± 1.90 mm in non-smokers, $p = 0.020$; and worse global myocardial function of the LV: non-smokers, LV Tei index 0.59 ± 0.22 ; 10 cigarettes/day, 1.06 ± 0.22 ($p < 0.001$). Gestational diabetes was also related with worse global myocardial function of the LV: LV Tei index 0.77 ± 0.18 vs. 0.60 ± 0.23 , $p = 0.006$.

CONCLUSIONS

Functional echocardiography in the first days of life could identify a high-risk group within healthy neonates, who could be targeted for early screening of blood pressure and other cardiovascular risk factors, as well as for promoting healthy diet and physical exercise.

ABS 5

POSTNATAL OUTCOME OF FETAL TACHYARRHYTHMIAS: 7-YEAR TERTIARY NEONATAL INTENSIVE CARE UNIT EXPERIENCE

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BACKGROUND AND AIMS

Despite being rare during pregnancy, persistent fetal tachyarrhythmia can cause cardiac compromise resulting in hydrops if left untreated. We aimed to review the postnatal outcome of neonates presenting with fetal tachyarrhythmia.

METHODS

We conducted a retrospective review of neonates with an antenatal diagnosis of fetal tachyarrhythmia between 1/4/2009 and 31/3/2016 (7-year period).

RESULTS

In the last 7 years, 13 patients were identified with fetal tachyarrhythmia. The mean gestation was 37 weeks (range 36-39 weeks) and the mean birth weight was 3,300 grams. Three patients (23%) were diagnosed just prior to delivery and did not receive antenatal antiarrhythmics. Six mothers (46%) received monotherapy with either flecainide (5 cases) or digoxin (1 case) and four mothers (31%) received

two or more medications (combination between digoxin, flecainide, amiodarone and sotalol). Hydrops was present in 7 fetuses (54%). Six fetuses (46%) cardioverted *in-utero* following maternal pharmacotherapy. Seven neonates had postnatal tachyarrhythmia: 1 cardioverted spontaneously, 2 with intravenous adenosine, one with propranolol and flecainide and three with DC shock (2 atrial flutters and one broad complex tachyarrhythmia). Four patients (30%) were transferred to the regional pediatric cardiac centre for recurring or refractory tachyarrhythmia or further investigations. Nine patients (70%) were discharged home, 8 on antiarrhythmic medications (4 on flecainide, 4 on a combination of two antiarrhythmics) and 1 without antiarrhythmic treatment.

CONCLUSIONS

Maternal pharmacotherapy for fetal tachyarrhythmia is crucial to prevent cardiovascular compromise resulting in hydrops. Atrial flutter and broad complex tachyarrhythmia are likely to be refractory and require DC shock postnatally.

ABS 6

POSTNATAL SUPRAVENTRICULAR TACHYCARDIA: 7-YEAR EXPERIENCE IN A TERTIARY NEONATAL INTENSIVE UNIT

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INTRODUCTION

Supraventricular tachycardia (SVT) is the commonest tachyarrhythmia in neonates. We aimed to review all newborn infants admitted to our tertiary Neonatal Intensive Care Unit with postnatal SVT in the last seven-year period.

METHODS

Retrospective review of postnatal SVT between 1/4/2009 and 31/3/2016. Neonates with antenatal diagnosis of tachyarrhythmia were excluded.

RESULTS

Nine neonates had postnatal SVT out of a total of 10,355 admissions to the Neonatal Unit in the last 7 years. The mean gestation was 35 weeks (26-41 weeks) and the mean birth weight was 2,627 grams (950-4,500 grams). All 9 neonates had documented SVT. Three had more than one episode of SVT (total of 12 episodes). There were no underlying cardiac defects identified except for one patient with right ventricular dysfunction and hydrops. One patient

had SVT following PDA ligation. Two patients (22%) required mechanical ventilation because of the SVT. Out of the 12 episodes, five terminated spontaneously, one with vagal manoeuvres and four with adenosine (given in total of 7 patients). Two neonates cardioverted with digoxin. No direct current (DC) shocks were administered. Maintenance medication was started in seven patients (78%), which was either digoxin (6 patients) or flecainide (1 patient). One patient was discharged home without antiarrhythmic medications and one patient was transferred to a Nephrology Unit (posterior urethral valves) again on no maintenance treatment.

CONCLUSIONS

Postnatal SVT is rare in the Neonatal Unit setting. All cases in our experience reverted to sinus rhythm spontaneously or with medication. None required DC shock and the outcomes were good.

ABS 7

LOWER HYDRATION IN NEONATES WITH CONGENITAL HEART DEFECT DOES NOT CAUSE THE INCREASE IN PLASMA COPEPTIN CONCENTRATION – PRELIMINARY DATA

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INTRODUCTION

Neonates with congenital heart defects should be managed with fluids cautiously due to the risk of pulmonary congestion. Echocardiography is currently one of the best methods to prevent fluid overload. The optimal fluid intake remains unclear. The aim of the study was to analyze the influence of a restrictive protocol for fluid intake in neonates with congenital heart defects on physiological volume homeostasis measured with the use of copeptin.

METHODS

The study included 9 neonates with congenital heart defects and fluid restriction, managed in the Neonatal Intensive Care Unit before cardio-surgery. Term neonates hospitalized in regular nursery served as the control. Study protocol included measurements of serum and urine osmolality and plasma copeptin during three subsequent days.

RESULTS

The mean difference in daily fluid intake between healthy neonates and those with congenital heart

defects was 40 ml/kg/day. The mean values of copeptin were tended to decrease during the observation, however in relation to healthy subjects, the difference did not reach statistical significance. Only in one neonate with congenital heart defect copeptin value was over the reference value obtained in the controls (5th-95th percentile: 305-1,665 pg/ml). Serum osmolality did not exceed 290 mOsm/kg water. Urinary osmolality was usually lower than the osmolality of serum.

CONCLUSIONS

The currently use protocol of restrictive hydration in neonates with congenital heart defects neither increase serum osmolality nor stimulation of vasopressin release by posterior pituitary gland. It seems that even more restrictive protocol of hydration is feasible.

ABS 8

CONGENITAL HEART DISEASE IN NEWBORNS: SIGNS AND SYMPTOMS

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INTRODUCTION

Congenital heart defects in newborns cause a wide range of symptoms, from only mild to life-threatening ones.

METHODS

We carried out a retrospective study in newborn babies born between 2014 and 2015 in Nis with great heart anomalies that required transport to cardio surgical center. We performed clinical examination, laboratory tests, ultrasound examination and transported the children to a cardio surgical center in the first day of life.

RESULTS

There were 8 babies with clinical symptoms manifesting in first hours or days of life: 3 with hypoplasia ventriculi sinistri cordis, 2 with transposition of great arteries, 1 with aortic arch interrupted, 1 with pulmonary valvular atresia, 1 with double outlet right ventricle (DORV). The clinical presentation was for 4 babies in the first hour of life on first pediatric examination and for 4 babies in the first day of life. Systolic murmur was present in 3 babies, systolic murmur and cyanosis in 1, only cyanosis and respiratory distress in 2 babies. None

of the babies had congenital heart disease detected on prenatal ultrasound exam.

CONCLUSIONS

We can make an early detection of congenital heart disease in our neonatology unit thanks to one educated neonatologist in echocardiography.

ABS 9

DIAGNOSIS OF CONGENITAL HEART DEFECTS IN A TERTIARY HOSPITAL (2010-2016)

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INTRODUCTION

Delayed diagnosis of critical congenital heart defects (CCHDs) is associated with increased morbidity and mortality. Understanding which are the more frequent CCHD and identifying the factors associated with delayed diagnosis in our Unit could help to improve screening, diagnosis and neonatal care.

METHODS

We examined a population-based retrospective cohort of congenital heart defects (CHD) cases between January 1st, 2010 and April 31st, 2016. Cases were admitted for treatment or diagnosis to our Unit. Ductus was excluded. CHD were considered critical if corrective surgery or interventional catheterization was performed or if the infant died of defect-related cause within the first year of life. Demographic, perinatal and mortality information was obtained from digital medical records. Pulse oximetry screening is not yet available in our Hospital.

RESULTS

Out of 24 CHD, 16 were CCHDs (**Tab. 1**). Six patients could not be classified because they were under one year old. 17 (70.8%) had isolated CHD, 2 had a major extracardiac defect and 7 had a syndrome (3 Down Syndrome, 1 Edwards Syndrome, 1 Leopard Syndrome, 2 others). Prenatal diagnosis occurred in 11 cases (46%), in-hospital diagnosis in 8 cases and delayed diagnosis in 5 cases (20.8%). 2 cases died: 1 had trisomy 18 and the other hypoplastic left heart syndrome. 9 (56.2%) CCHDS could have been diagnosed by pulse oximetry screening. 4 cases had CCHDs with delayed diagnosis; coarctation of the aorta, aortic hypoplasia, hypoplastic left heart

syndrome and dextro-transposition of the great arteries. The distribution of maternal age, prenatal care, gestational age, birth weight and multiple births is shown in **Tab. 2**. 20 cases (83.3%) had a heart murmur at the moment of diagnosis and 11 cases had (45.8%) cyanosis.

CONCLUSIONS

Despite increasing prenatal diagnosis of CCHDs delayed diagnosis still occurs. In our analysis these

Table 1 (ABS 9). Description of the cases of congenital heart defects.

Congenital heart defects	Cases
Aortic hypoplasia	3
Atrioventricular canal defect	4
Coarctation of the aorta	1
Dextro-transposition of the great arteries	1
Double outlet right ventricle	1
Hypoplastic left heart syndrome	2
Pulmonary valve stenosis	4
Pulmonary atresia	1
Tetralogy of Fallot	4
Tricuspid atresia	1
Tricuspid insufficiency	1

Table 2 (ABS 9). Distribution of maternal age, prenatal care, gestational age, birth weight and multiple births.

	Cases	%
Maternal age, y		
15-24	2	8.3
25-34	12	50.0
≥ 35	10	41.6
Prenatal care		
Yes	23	95.8
No	1	4.2
CCHD		
Isolated	11	68.7
Non isolated	5	31.2
Gestational age, wk		
≥ 37	17	70.8
< 37	7	29.1
Plurality		
Singleton	22	91.6
Multiple	2	8.3
Birth weight, g		
≥ 1,500	0	0.0
< 1,500	24	100.0

CCHDs: critical congenital heart defects.

defects are ductus-dependent and therefore targets for pulse oximetry screening.

ABS 10

CORRELATION OF FRACTIONAL SHORTENING, EJECTION FRACTION AND BLOOD PRESSURE IN PREMATURE INFANTS

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INTRODUCTION

Fractional shortening (FS) and ejection fraction (EF) are the indicators of cardiac contractility measured by echocardiography. We investigated the relationships between these indicators of cardiac contractility and blood pressure.

METHODS

This study was carried out at the NICU of Chung-Ang University Hospital between January 2011 and December 2012. We enrolled 154 neonates who had undergone the echocardiography. Diagnosis of decreased cardiac contractility was made when FS is lower than 30% or EF is lower than 60%. We collected data on blood pressure, heart rate, urine output, and the use of inotropic agents at the time when patients underwent echocardiography. Patients were stratified into 2 groups: decreased and normal cardiac contractility group.

RESULTS

The numbers of low FS group were 35 (15.5%) and the ones of normal FS group were 191 (84.5%). There was no statistically significant difference among the urine output of the two groups ($p = 0.995$). Only 3 neonates (8.6%) had hypotension whereas 32 neonates (91.4%) showed normal blood pressure among the low FS group. There was no statistically significant difference between hypotension and low FS ($p = 0.404$). 12 (11%) cases had low EF while 91 (89%) cases had normal EF. Urine output was 3.80 ± 2.90 cc/kg/h in the low EF group and 3.22 ± 1.57 cc/kg/h in the normal group. There was no statistically significant difference among the urine output of the two groups. There were no patient with hypotension and low EF and there was no statistically significant difference between hypotension and low EF ($p = 1.00$).

CONCLUSIONS

In neonates, normal blood pressure could be observed even if there was low cardiac contractility

on echocardiography findings. We should consider urination, skin color, and capillary-refill time rather than only blood pressure when we determine the administration of inotropic agents.

ABS 11

A WINDOW OF OPPORTUNITY FOR PDA TREATMENT

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BACKGROUND

Hemodynamically significant patent ductus arteriosus (PDA) is a common complication for very preterm or very small babies and a cause of morbidity and mortality, affecting more than 40% of preterm infants. Standard therapy for PDA closure has predominantly involved indomethacin, ibuprofen and surgical ligation. Several adverse events have been reported. Paracetamol is used worldwide for its analgesic and antipyretic actions. Several studies have demonstrated the potential efficacy of paracetamol in early PDA. It acts by directly inhibiting the activity of prostaglandin synthase. The role of paracetamol as an alternative treatment for the closure of PDA is under investigation

OBJECTIVE AND METHODS

To describe our experience after using paracetamol for PDA closure among 4 babies in which the use of indomethacin and ibuprofen was contraindicated. We also aim to describe adverse events after using paracetamol. Dose used: 15 mg/kg/6 h intravenous during 3 days in 3 babies and 6 days in one baby.

RESULTS

We present our results after using paracetamol to treat PDA in four preterm babies. Severe hypertransaminasemia was the only side effect we observed and no treatment was needed.

CONCLUSIONS

Paracetamol appears to be a promising new alternative to indomethacin, ibuprofen or surgery for closing PDA with possibly fewer adverse events, although a limited number of infants with PDA has been studied. The potential side effects of ibuprofen or indomethacin make paracetamol a potential alternative pharmacological treatment.

ABS 12

PARACETAMOL AS A POSSIBLE TREATMENT OF CHOICE FOR PATENT DUCTUS ARTERIOSUS

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INTRODUCTION

The ductus arteriosus (DA) is a vessel that connects the pulmonary artery and the aorta during fetal life; its closure occurs in term infants by 48-72 hours of life due to oxygen dependent mechanisms and decreased levels of prostaglandins. The lack of this closure leads to the condition known as patent ductus arteriosus (PDA), with an incidence that is inversely proportional to the gestational age (GA), being the most common heart disease in preterm newborns (PNB; more than 60% in most prematures). Pulmonary congestion and hypoperfusion of bowel, kidney and brain are frequent in PNB with PDA. PDA is also related to increased risk of death, bronchopulmonary dysplasia (BPD), necrotizing enterocolitis (NEC), renal failure, intraventricular hemorrhage (IVH), cerebral palsy (CP) and periventricular leukomalacia (PVL). Although the optimal timing and type of treatment is a subject of intense debate, DA closure is indicated in our NICU in symptomatic patients or those with ultrasonographic data of moderate to severe hemodynamic impact and little chance of spontaneous closure. As a first option we use intravenous ibuprofen; however

COX-2 are not free of severe side effects and contraindications, including kidney failure, NEC, severe hyperbilirubinemia, untreated severe sepsis, coagulopathy and recent hemorrhage. For this reason we have tried to find a safe and effective alternative, performing an exhaustive review of the literature.

METHODS

We report a retrospective study of the patients that received paracetamol as treatment for PDA in our NICU in the last 3 years. The decision to treat was taken by the NICU staff knowing the ultrasound results and the clinical features of each case.

RESULTS

In our NICU, we have used both orally and intravenously paracetamol in 9 patients; all of them had HsPDAs and parents gave consent for its off label use, for contraindications to the first choice drug. **Tab. 1** collects the patient characteristics. Seven had a GA lower than 28 w and five had a weight below 1,000 g. Six babies had IVH, that also was the leading cause of paracetamol choice. **Tab. 2** shows the sonographic data related to PDA and PDA treatment. Half of the patients were initially treated with ibuprofen, which was replaced by paracetamol for therapeutic failure or contraindication. The treatment was successful in seven of nine patients, which means a success rate of 70.7%, similar to results reported by previous studies in literature. Only two babies required surgery and none had side effects attributable to treatment.

CONCLUSIONS

After the observation made by Hammerman et al. in 2011, describing the successful closure of PDA in a preterm infant, which received paracetamol for treatment of pain, several authors have reported similar results. Some clinical trials (Dance et al., 2013 – 160 patients; Oncel et al., 2014 – 90 patients)

Table 1 (ABS 12). Characteristics of the patients.

Patient	Weight (g)	GA	Sex	IVH	NEC	Discharged alive
1	990	28 ⁺⁵	M	No	No	Yes
2	480	27 ⁺⁴	F	Yes (IV)	Yes	Yes
3	1,080	27	M	Yes (III)	No	Yes
4	800	25 ⁺⁵	M	No	No	Yes
5	1,000	26 ⁺²	F	No	Yes	No
6	980	26 ⁺⁶	M	Yes (III)	No	Yes
7	700	24 ⁺⁶	F	Yes (III)	No	Yes
8	1,250	27 ⁺⁵	M	No	No	Yes
9	1,480	29 ⁺¹	M	No	No	Yes

IVH: intraventricular hemorrhage; NEC: necrotizing enterocolitis.

Table 2 (ABS 12). Sonographic data related to patent ductus arteriosus (PDA) and PDA treatment.

Patient	PDA size (mm/kg)	LA/Ao index	Previous treatment	Success	Cause of paracetamol treatment	Surgery
1	1.8	-	Yes	Yes	IVH, low platelets	No
2	5	-	No	Yes	IVH	No
3	2.59	1.6	Yes	Yes	IVH	No
4	2.5	1.7	No	No	IVH, treatment failure	Yes
5	1.6	1.6	No	Yes	Treatment failure	No
6	2.75	2.7	Yes	Yes	IVH	No
7	3.57	2.5	No	No	IVH	Yes
8	1.44	1.8	Yes	Yes	NEC risk	No
9	1.55	2.3	No	Yes	Treatment failure	No

PDA: patent ductus arteriosus; LA/Ao: left atrial aortic root ratio; IVH: intraventricular hemorrhage; NEC: necrotizing enterocolitis.

compared both drugs and found that oral/intravenous paracetamol is, at least, as effective as ibuprofen with a rate of closure higher than 70%. Therefore, paracetamol is proposed as an alternative when ibuprofen is unsuccessful or contraindicated. We strongly believe that paracetamol could become a drug of first choice, at least in certain circumstances. It shows certain advantages since its mechanism of action is the inhibition of prostaglandin synthesis, but acting on the peroxidase component of the enzyme. In theory, this makes it a more suitable drug in situations where COX-2 inhibitors are less effective, as extreme preterms or patients with hypoxia. Moreover it could also be a safer drug, because most of the classical COX-2 side effects do not occur or do so merely anecdotally. There are, however, some reasonable concerns. First the dose used is higher than the analgesic or antipyretic doses for preterm infants, so there is concern about its possible hepatotoxicity; but also the long-term side effects are unknown, particularly in neurodevelopment. Close monitoring and neuropsychological assessment is therefore recommended.

ABS 13

PARACETAMOL FOR DUCTAL CLOSURE, A SINGLE CENTER EXPERIENCE

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INTRODUCTION

The treatment of the patent ductus arteriosus (PDA) in premature babies has been a matter of controversy

in the last years. A more conservative approach based on clinical significance and echocardiographic findings is suggested. The traditional drugs used for pharmacological treatment, indomethacin and ibuprofen, are associated with renal and gastrointestinal side effects. In the last years, a growing number of reports and some small studies suggest that oral or intravenous (IV) paracetamol could be as effective as traditional drugs and can be an option when they are contraindicated. We report the experience with IV paracetamol in a single center as a treatment for PDA closure.

METHODS

A retrospective observational study was performed. All the preterm neonates diagnosed with a significant PDA in the period comprised between January 2014 (when the use of paracetamol was introduced) and April 2016, and medically treated, were included. Data were obtained from clinical charts. When a significant PDA with clinical and/or echocardiographic criteria for treatment (according to the NICU guidelines) was diagnosed, IV ibuprofen was the drug of choice. IV paracetamol was used as a first option when ibuprofen was contraindicated or as a second line drug after ibuprofen failure.

RESULTS

Eighteen preterm neonates were included. 13 were treated with ibuprofen and 5 with paracetamol as first choice. 2 babies in the ibuprofen group received a course of paracetamol after ibuprofen failure. **Tab. 1** summarizes the characteristics of the population. The range of paracetamol dose was wide, from 15 to 60 mg/kg/day, as established by the neonatologist. The rate of ductal closure was 77% (10/13) for ibuprofen and 80% (4/5) for paracetamol when used as the first drug, and 50% (1/2) for paracetamol used as a rescue treatment.

Table 1 (ABS 13). Characteristics of the population.

	IV ibuprofen (n = 13)	IV paracetamol as 1 st choice (n = 5)	IV paracetamol as rescue after ibuprofen failure (n = 2)
Gestational age (weeks)	28.0 (25.1-31.1)	27.0 (25.2-27.5)	29.4 (29.5-29.6)
Birth weight (g)	1,064.6 (730-1,610)	888 (630-1,000)	1,250 (1,000-1,500)
Male sex (%)	54	80	50
PDA size (mm)	2.39 (1.7-3.8)	2.2 (1.8-3)	2.95 (2.9-3)
Age at 1 st dose (days)	4.07 (2-7)	3.4 (2-5)	NR
Respiratory compromise (%)	46	80	50
Respiratory condition (%)			
Mechanical ventilation with MAP > 10 mmHg, FiO ₂ > 40%	7.7	60	0
Mechanical ventilation with MAP < 10 mmHg, FiO ₂ < 40%	15.3	40	0
Non invasive ventilation (nCPAP or nIPPV)	53	0	100
High flow oxygen cannulae	23	0	0
Hemodynamic compromise (%)	61.5	60	100
Renal or digestive compromise (%)	7.7	40	0

PDA: patent ductus arteriosus; IV: intravenous; NR: not reported.

2/13 patients in the ibuprofen group required surgical ligation (1 of them after the failure of the rescue treatment with paracetamol), and none in the paracetamol as first choice group (the patient who did not respond died in the first week after withdrawal of treatment). No significant adverse effects were observed after the use of any of the drugs. Mortality was 23% in the ibuprofen group and 20% in the paracetamol group. 100% of the survivors in the paracetamol group and 23% in the ibuprofen group were under O₂ at 36 weeks of postmenstrual age.

CONCLUSIONS

Despite the lack of evidence, the use of paracetamol as an alternative treatment for ductal closure is increasing. Our limited experience suggests that paracetamol can be a safe and effective alternative to ibuprofen, independently of the gestational age and severity of the clinical condition. Large randomized clinical trials are needed.

ABS 14

EFFICACY OF PRENATAL ULTRASONOGRAPHY IN DIAGNOSING CARDIOVASCULAR ANOMALIES

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INTRODUCTION

Showing a prevalence rate of 0.7-0.9%, cardiovascular malformations discovered in newborns are regarded most common. The aim of this study is to examine the efficacy of prenatal ultrasound diagnostics in detecting developmental disorders in the cardiovascular system.

METHODS

We have processed the prenatal sonographic and postnatal clinical or fetopathological details of 607 cardiovascular abnormalities in 372 fetuses/newborns suffering from cardiovascular diseases according to EUROCAT recommendations over a 7-year period at the 1st Department of Obstetrics and Gynecology. The patients were divided into three groups: group 1, prenatal sonographic and postnatal/ fetopathological examinations yielded fully identical results; group 2, postnatally or post abortion detected cardiovascular changes were partially discovered in prenatal investigations; group 3, prenatal sonography failed to detect the cardiovascular malformation identified in postnatal or fetopathological examinations. Cardiovascular changes representing part of certain multiple malformations associated and chromosomal aberration were investigated separately.

RESULTS

Prenatal sonographic diagnosis and postnatal/ fetopathological results completely coincided in 63.4%, i.e. 236/372 cases in postnatal or fetopathological examinations in cases of cardio-

vascular developmental disorders. In 66/72 cases (17.7%) discovery was partial, while in 70/369 cases (18.8%) no cardiovascular malformations were detected prenatally. Isolated cardiac malformations were observed in 246 fetuses, in 167 of which (67.9%) the results of prenatal ultrasonography and postnatal or post abortion examinations showed complete coincidence. In 41 cases (16.7%) the malformation was partially detected prenatally, and in 38 cases (16.4%) no cardiovascular malformations were diagnosed prenatally. Cardiovascular disorders were found to represent part of multiple malformations in 85 cases, prenatal diagnosis of cardiovascular malformation. The findings of postnatal/fetopathological examinations completely coincided in 33 patients (50.6%), partial coincidence was found in 18 fetuses (17.9%), while in 24 cases (28.2%) the disorder was not detected prenatally. In 41 fetuses chromosomal aberration was associated with the cardiovascular malformation. In 20 cases trisomy 21 (Down's syndrome) was detected, trisomy 18 (Edwards syndrome) in 15 cases, and in 2 cases trisomy 13 (Patau syndrome). In 4 cases other chromosomal abnormalities were reported.

CONCLUSIONS

In more than half of the cases, postnatally/fetopathologically diagnosed cardiovascular abnormalities coincided with the prenatally discovered developmental disorders. Our results have confirmed that ultrasonography together with fetal echocardiography plays an important role in diagnosing cardiovascular malformations, although it is not possible to discover all cardiovascular developmental abnormalities.

ABS 15

OUTCOME OF NEONATES WITH CRITICAL CONGENITAL HEART DISEASE HOSPITALIZED IN AN INTENSIVE CARE UNIT OF A TERTIARY HOSPITAL

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INTRODUCTION

Nearly 1% of the newborns have congenital heart defects, and approximately one-quarter of those defects are critical congenital heart disease.

Congenital heart disease has been reported to be responsible for 30-50% of infant mortality due to birth defects.

METHODS

A retrospective cohort study was conducted among neonates with critical congenital heart disease, admitted to our neonatal intensive care unit, during the years 2013-2015. Subjects were divided into 2 main groups: Cyanotic Congenital Heart Disease (C-CHD) and Non Cyanotic Congenital Heart Disease (NC-CHD), including 13 and 38 neonates, respectively.

RESULTS

Overall 52 neonates with critical congenital heart disease (28 males and 24 females) were admitted (13% of total admissions). Mean gestational age was 36.5 ± 3.6 weeks. Mean birth weight was $2,677 \pm 884$ g. 16 neonates were preterm (mean gestational age 32.9 ± 3.1 weeks and mean birth weight $1,729 \pm 747$ g). 35 neonates were born at term (mean gestational age 38.4 ± 1 and mean birth weight $3,089 \pm 552$ g). Overall mortality rate was 17.3% (9 neonates: 3 term with C-CHD, 4 term with NC-CHD and 2 preterm with NC-CHD). In the C-CHD group, 10 neonates underwent surgical treatment (77%), 7 of them being term and 3 preterm, while 1 preterm was non surgically treated. In the NC-CHD group 23 neonates underwent surgical treatment (60%), 19 of them being term and 4 preterm, while 11 were non surgically treated (8 term 3 preterm). In the same group balloon valvuloplasty was performed in 4 neonates (8%). Of the neonates that were surgically treated, 51% required a new intervention in the future: 8 (61%) with C-CHD and 9 (23%) with NC-CHD.

CONCLUSIONS

An increased incidence of NC-CHD versus C-CHD was found. The need for future corrective surgery was significantly higher in infants with C-CHD. Mortality was increased in C-CHD, without being influenced by prematurity.

ABS 16

SEASONAL DISTRIBUTION OF CONGENITAL HEART DISEASE

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INTRODUCTION

Seasonal patterns of genetic disorders may play a role in identifying certain environmental risk factors. It is well known that cardiac embryogenesis takes place during the first trimester of pregnancy. However, most population studies do not correlate the outcome to the exposure period, but rather to the period of birth.

METHODS

A retrospective cohort study was conducted among neonates with congenital heart disease, admitted to our neonatal intensive care unit (tertiary hospital), during the years 2013-2015. 28 neonates were male and 24 female; 17 neonates were preterm (< 36 weeks) and 35 full-term. The purpose of the study was to determine the seasonal distribution of congenital heart disease and the possible relations with environmental factors. Gestational age and periconceptional period were assessed and seasonal distribution of first semester of pregnancy was correlated with the incidence of congenital heart disease.

RESULTS

An increased incidence of births occurred between May to October ($p = 0.007$). 35 neonates were born in these months versus 17 during the rest of the year. There was a seasonal distribution, with an increased incidence of conception between October and December (25 pregnancies, 48%) and an increased incidence of first trimester pregnancies between October and February.

CONCLUSIONS

There is a seasonal distribution in the incidence of congenital heart disease. Infectious and environmental factors probably affect embryonic cardiac developmental program.

ABS 17

SOCIOECONOMIC FACTORS ASSOCIATED WITH CONGENITAL HEART DISEASE IN NEONATES

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INTRODUCTION

Socioeconomic factors may play a major role in prenatal diagnosis and survival of neonates with

congenital heart disease. In addition, they might contribute to certain variations affecting the incidence of congenital heart disease.

METHODS

A retrospective cohort study was conducted among neonates with congenital heart disease, admitted to our neonatal intensive care unit (tertiary hospital) during the years 2013-2015. Data was collected for 51 families, regarding nationality, area of residency, educational level, employment status, insurance coverage and obstetric care.

RESULTS

38.46% families were of foreign origin and 61.54% were Greek. 51.92% of the population lived in urban and 48.08% in rural areas. 7.69% of the mothers were single parents. 40.38% were of elementary, 46.15% of intermediate and 13.47% of higher education. 21.15% were unemployed versus 78.85% who were employed. 67.30% had insurance coverage and 32.70% were uninsured, respectively. Obstetric care was provided to 69.24% of mothers, while 30.76% of mothers did not receive any obstetric care. Congenital heart disease was diagnosed prenatally in 32.70% of the neonates.

CONCLUSIONS

A significant percentage of neonates with congenital heart disease was not diagnosed prenatally, possibly due to the lack of obstetric care. Parental educational level was negatively related to the incidence of congenital heart disease. On the contrary, nationality and unemployment did not affect the incidence of congenital heart disease.

ABS 18

ASYMPTOMATIC PERICARDIAL EFFUSION IN A PRETERM INFANT WITH UMBILICAL VENOUS CATHETER

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INTRODUCTION

Pericardial effusion (PCE) is a complication of central venous catheter (CVC). In most cases, PCE presents with sudden cardiac decompensation and cardiorespiratory instability. It is unusually detected in asymptomatic infants.

CASE REPORT

We present the case of a male preterm newborn (27⁺⁵ w, 920 g). Umbilical venous catheter (UVC) was

inserted first day of life. Chest radiograph revealed line tip within the cardiac silhouette. After UVC was removed, echocardiographic (ECO) exam confirmed tip line at right atrial/vena cava junction. We started infusion of parenteral nutrition through UVC. He was stable in both respiratory and hemodynamic systems. He suffered asymptomatic hyperglycemia. On the third day of life, ECO evaluation for ductus arteriosus patency showed mild PCE (5 mm) without impact on cardiac function and the UVC line tip into the superior vena cava, crossing right atrium. Chest radiograph showed rounded cardiac silhouette and normal cardiothoracic ratio. We removed the UVC and followed up PCE by serial ECO exams until spontaneous resolution at the thirteenth day of life.

DISCUSSION

PCE is a serious condition causing sudden cardiac collapse and cardiorespiratory instability and is associated to 45% mortality. Due to the increase in use of CVCs in neonatal intensive care units, there have been many case reports of PCE associated with total parenteral nutrition. The thin wall of a premature/neonatal heart is easier to damage, with the myocardium being normally absent in some sections of the atrial wall. Hyperosmolar fluid in contact with the endocardium causes osmotic injury.

CONCLUSIONS

PCE is a complication of intracardiac CVCs and it usually causes severe symptoms and high mortality rate, requiring pericardiocentesis. In rare cases it can be diagnosed in routine exams in asymptomatic patients. Therefore, routine radiography should be performed and the CVC tip should be readily identifiable.

ABS 19

PERSISTENT PULMONARY HYPERTENSION OF THE NEWBORN: EXPERIENCE OF A TERTIARY CARE UNIT IN PORTUGAL

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INTRODUCTION

Persistent pulmonary hypertension of the newborn (PPHN) is a medical condition causing hypoxemic

respiratory failure, high vascular pulmonary resistance and changes in pulmonary vasoreactivity, leading to a right-left extrapulmonary shunt.

AIM

To evaluate the cases of PPHN admitted to a neonatal intensive care unit of a tertiary hospital in Portugal.

METHODS

Clinical files from newborns (NB) admitted between 2011 and 2015 were reviewed. A level of significance of 0.05 was considered.

RESULTS

58 NB were included, 62.1% males, with a median gestational age (GA) of 36 weeks [24-41 W]. Half of them were preterm, 19% extreme preterm, and pre/perinatal risk factors for PPHN were found in 54.4%. It was assumed that the main mechanism for PPHN was pulmonary vasoconstriction (79.3%), followed by pulmonary hypoplasia (5.2%), vascular remodeling (5.1%), vascular obstruction (1.7%) and multifactorial causes (8.6%). In 29.3% of cases PPHN was mild, in 27.6% moderate and in 43.1% of cases severe. Considering the moderate-severe PPHN group (n = 41), 95% of cases received conventional invasive ventilation, and of these, 19 also were on rescue high-frequency ventilation (HFV). Twelve NB underwent inhaled nitric oxide (iNO) (median 20 ppm, range 18-36 ppm), with a favorable response in 50%. Surfactant was used in 80.5%, amines in 65.9%, fluids in 34.1% and sildenafil in 17.1% of NB. Mortality rate was 39% and inversely proportional to GA (p = 0.004). NB on HFV had higher mortality (p = 0.021) and there was a positive association between the response to iNO and survival (p = 0.002).

CONCLUSIONS

The most frequent cause of PPHN was pulmonary vasoconstriction, confirming data from literature. Response to iNO was associated with greater survival. The high prevalence of extreme preterms in our sample may explain the high use of surfactant and higher mortality than that described by other authors. The increased mortality associated with HFV may be explained by the clinical severity that motivated the choice of this ventilatory technique.

ABS 20

OVERVIEW OF A CASE OF HYPERTROPHIC CARDIOMYOPATHY IN A NOONAN SYNDROME PATIENT IN OUR HOSPITAL

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INTRODUCTION

Hypertrophic cardiomyopathy (HCM) is defined by an increased left ventricular wall thickness. In newborns, it may be associated with prenatal transient causes and to polymalformative syndromes. HCM is characterized by diversity in both phenotypic expression and clinical course. Noonan syndrome (NS) is a genetic disorder with an incidence of 1 in 1,000 to 2,000 live births. Its cardinal features include unusual facies, congenital heart disease, short stature and chest deformity. Congenital heart defect is present in about 50% of the cases. If the defect is not severe, life expectancy is normal. The RASopathies are a clinically defined group of medical genetic syndromes of the RAS/mitogen-activated protein kinase pathway. These disorders include NS.

CASE REPORT

This female infant was born to healthy non-consanguineous parents at 35 weeks of gestation due to hydrops fetalis. She was intubated in the first minutes. Physical examination revealed hypertelorism, down-slanting eye and edema. The initial radiography showed pleural effusion, which was diagnosed as chylothorax by following analysis. Investigations for the hydrops were performed, with normal results. Due to the clinical features, a diagnosis of probable NS was formulated. An echocardiogram revealed a myocardial hypertrophy. A molecular study for RASopathies was performed, which result is still pending. On day 4, propranolol was initiated. On days 6 and 12, she presented hypotension with poor contractility, low cardiac output, and a moderate left ventricular outflow tract obstruction. On day 19, her cardiac status worsened and she died on the 24th day.

CONCLUSIONS

Mutations of the NS have been described in 7 genes: *PTPN11* (50%), *SOS1* (20%), *RAF1* (15%), *KRAS* (5%), and *NRAS*, *BRAF*, *MAP2K1* (2%). NS is also linked to congenital cardiac defects: HCM is present in about 95% of mutations in the *RAF1* gene. In our patient, HCM conducted to multiorgan failure and to death. However, it is not currently possible to assess the extent of genetic contribution to the early fatal outcome.

ABS 21

BRIEF RESOLVED UNEXPLAINED EVENTS (BRUE) DURING THE FIRST YEAR OF LIFE IN

EX-PRETERM INFANTS DISCHARGED HOME WITH AND WITHOUT CAFFEINE

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INTRODUCTION

Current recommendations suggest the likelihood of SIDS/BRUE after 43 weeks of postconceptional age (PCA) it is not different between term and preterm infants, as well as there is no documented association between apnea of prematurity and the risk of SIDS/BRUE. The ongoing study on the effect of caffeine on respiratory pattern in infants born earlier than 35 weeks was launched on January 2015; the data for this research continues to be collected by pulse oximetry recording performed at home.

METHODS

136 preterm infants were divided in 3 groups: 1) Caffeine Group: 33 Infants born less than 35 weeks GA discharged home on caffeine; 2) Control Group: 73 Infants of similar age without apnea of prematurity at the time of discharge; 3) Reference Group: 30 healthy infants born 36-37 weeks of GA (normal nursery population). The following records were used for analysis: total number of ER visits within 6 and 12 months post-discharge from hospital; total number of admission to the pediatric wards/intensive care unit; total number of documented upper respiratory tract infections, including bronchiolitis, and documented BRUE episodes. For patients with confirmed BRUE episodes detailed family, social and medical history was obtained from parents and care providers (pediatricians and family physicians).

RESULTS

Out of 136 infants 4 had documented BRUE, and all these patients were from control group and were born at > 33 weeks of GA. According to BRUE clinical practice guideline 3 patients had 3 risk factors out of 7; and 1 patient had 5 out of 7. All infants came from non-smokers families; 3 were on exclusive breast-feed and 1 was on fortified formula for poor weight gain. 2 infants had events after 43 weeks of PCA. None of the patients had acute medical condition at the time of BRUE (e.g. viral infection).

CONCLUSIONS

Stratification of risk factors to determine lower-risk patients was calculated and is presented below: 1) age > 60 days; 2) gestational age \geq 32 weeks and postconceptional age \geq 45 weeks; 3) occurrence of only 1 BRUE (no prior BRUE ever and not occurring in clusters); 4) duration of BRUE < 1 minute; 5) no cardiopulmonary resuscitation by trained medical provider required; 6) no concerning historical features; 7) no concerning physical examination findings.

ABS 22**EFFECTS OF A PATENT DUCTUS ARTERIOSUS ON INTESTINAL MUCUS BARRIER IN PRE-TERM NEWBORNS**

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INTRODUCTION

In contrast with term infants, preterm newborns have less mesenteric blood flow reserve. Their diminished reserve may increase their risk of developing intestinal ischemia when alterations in intestinal blood flow occur. Patent ductus arteriosus (PDA) has a profound impact on mesenteric perfusion.

OBJECTIVE

To evaluate the effects of PDA on intestinal mucosal defense ability in preterm infants.

METHODS

Preterm neonates (gestational age 33) who were admitted to the NICU of the K. Faradjeva Pediatric Institute were included in this prospective observational study and were divided into two groups: the first group consisted of 20 infants with PDA and the second group consisted of 51 infants without PDA. Intestinal trefoil factor (ITF) and Mucin 2 (MUC 2) were chosen as a marker of mucosal restitution and repair. Serum ITF and MUC 2 were quantified by ELISA. Results were compared by Mann-Whitney test.

RESULTS

Compared to the control group, the neonates with PDA had lower levels of ITF and MUC-2 (ITF and MUC 2 were 15.0 ± 3.3 ng/ml, 12.59 ± 1.79 ng/ml in the first group and 35.8 ± 4.9 ng/ml, 14.92 ± 1.239 ng/ml in the second group respectively). These differences were significant only in relation to ITF ($p < 0.05$).

CONCLUSIONS

The low level of ITF in preterm infants with PDA may reduce compensatory protective mechanisms of mucus layer and predispose them to intestinal pathology.

ABS 23**NEONATAL CONGESTIVE HEART FAILURE DUE TO AN INTRACRANIAL PIAL ARTERIOVENOUS FISTULA**

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INTRODUCTION

Congestive heart failure (CHF) in the neonatal period is usually caused by intracardiac anomalies or cardiac dysfunction. Extracardiac causes are rare.

CASE REPORT

We report the case of a full-term newborn who presented in the first hours of life with respiratory distress and feeding difficulties. Examination revealed tachypnea, grunting and systolic murmur. Blood test ruled out sepsis and chest radiography (XR) suggested transient tachypnea of the newborn and cardiomegaly. Cardiologic evaluation with serial echocardiography identified a dilated right heart, without structural or function lesion. During the first days of life, respiratory function progressively worsened and XR showed interstitial pulmonary opacities, so pulmonary etiology was considered, and antibiotherapy started. We excluded the most frequent interstitial pulmonary pathologies (cystic fibrosis and infectious causes). Thoracic CT showed ground-glass opacification in lower lobes, cardiomegaly and enlarged vascular mediastinal structures. Thoracic MRI suggested paravertebral vascular malformation, cardiomegaly and pulmonary hypertension. Progressive CHF installed and cranial ultrasound denoted ventriculomegaly and suspicious Doppler. Cranial MRI confirmed an intracranial pial arteriovenous fistula (AVF). Cerebral angiography and endovascular embolization of afferent arteries was performed, with partial occlusion of AVF. The patient status declined with hemodynamic and neurological instability. Cranial TC presented

a large cerebellar hematoma with subarachnoid hemorrhage. Craniotomy was carried out but the neonate died shortly after this procedure.

CONCLUSIONS

This case emphasizes the consideration of CHF in neonates, a rare and subtle clinical condition. Vascular malformation, including pial AVF should be considered after excluding congenital heart disease. Pial AVF represent a serious yet rare form of cerebrovascular disease. Early and accurate diagnosis and interventions may prevent death and delay neurological deficits.

ABS 24

TRANSIENT LEFT VENTRICULAR DYSFUNCTION OF THE NEWBORN: ABOUT TWO CASES

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INTRODUCTION

Transient left ventricular dysfunction of the newborn is rare. Cardiac Doppler ultrasound examination is the key in the management. We aim to remind etiologies and management of this rare entity.

CASE REPORT

We report two cases of newborns hospitalized in our center with transient left ventricular dysfunction due to rare causes. A 4 days-aged

female newborn was admitted for hypoglycemia, severe hypoxia, dehydration and acute cardiovascular collapse. Chest radiography showed cardiomegaly. Echocardiography showed a dyskinetic left ventricle with low ejection fraction < 20%. After oxygen administration and rehydration, clinical improvement was noted and the ejection fraction improved to 50% within 48 hours. At 15 months, her physical examination is normal. A 36 hours-aged male newborn was admitted for severe respiratory distress. Echocardiography showed persistent pulmonary hypertension. At 11 days age, he developed a heart failure and femoral pulses were no longer detected. The cardiac ultrasound control showed a left ventricular dysfunction with an ejection fraction of 30%. The abdominal Doppler ultrasound found an extensive thrombosis in infrarenal abdominal aorta. Thrombolysis was not made because of a subarachnoid hemorrhage found by transfontanellar ultrasound. The outcome was favorable after hemodynamic and respiratory stabilization. Echocardiographic control at day 14 showed an ejection fraction of 50%. The biological assessment revealed a resistance to activated protein C. The aortic thrombosis has spontaneously disappeared within 10 months. At 15 months, his physical examination is normal.

CONCLUSIONS

The prognosis of transient ventricular dysfunction depends on rapid management, which allows full recovery within few days.