www.jpnim.com Open Access eISSN: 2281-0692
Journal of Pediatric and Neonatal Individualized Medicine 2025;14(2):e140209
doi: 10.7363/140209
Published online: 2025 Aug 28

Selected Abstracts of the 10th Panhellenic Congress of Neonatology

ATHENS (GREECE) · MAY 23RD-25TH, 2025

The Congress has been organized by the Hellenic Neonatal Society.

How to cite

[Abstract's authors]. [Abstract's title]. In: Selected Abstracts of the 10th Panhellenic Congress of Neonatology; Athens (Greece); May 23rd-25th, 2025. J Pediatr Neonat Individual Med. 2025;14(2):e140209. doi: 10.7363/140209.

ABS 1

GLOBAL PATTERNS IN THE USE OF ANTI-VEGF THERAPY FOR RETINOPATHY OF PREMATURITY (ROP)

N. Kozeis[1,2,3], M. Tzitiridou[4], A. Kozei[1], M. Triantafylla[1], C. Tsenikoglou[1], E. Panagiotou[1], S. Tyradellis[1]

[1]Pediatric Eye Center of Greece, Thessaloniki, Greece

[2]Pediatric Eye Department, University Hospitals, Cleveland, Ohio, USA

[3]International Pediatric Ophthalmology and Strabismus Council (IPOSC)

[4]School of Healthcare Sciences, Department of Midwifery, University of Western Macedonia, Ptolemaida, Greece

INTRODUCTION

Retinopathy of prematurity (ROP) continues to be a leading cause of preventable childhood blindness, with over 50,000 cases reported globally. The use of anti-vascular endothelial growth factor (anti-VEGF) agents has become more prevalent for treating Type 1 ROP, particularly in posterior presentations. However, treatment protocols vary significantly, as no universally endorsed guidelines exist.

AIMS

This study aimed to explore global clinical practices regarding anti-VEGF therapy in ROP by examining:

- the preferred anti-VEGF agents and their dosages;
- the types and zones of ROP treated;
- the anaesthesia techniques used during administration.

METHODS

An online survey was circulated among pediatric ophthalmologists worldwide through professional societies such as the International Pediatric Ophthalmology and Strabismus Council (IPOSC). The questionnaire collected data on current practices and preferences in administering anti-VEGF treatment for ROP.

RESULTS

Participant demographics

A total of 104 clinicians responded, with the highest representation from the United Kingdom (33%), the United States (27%), and China (19%).

Anaesthesia practices

In non-ventilated neonates, most practitioners employed either a combination of sedation and topical anaesthesia (42%) or topical anaesthesia alone (41%). In ventilated neonates, topical anaesthesia was the predominant choice (54%).

Anti-VEGF use

Bevacizumab was identified as the most frequently used first-line agent (50%), despite its off-label status for ROP. The most common dosage reported was 0.625 mg (in 0.025 ml) (65%), though 35% of participants used varying dosages.

Half of the respondents indicated that anti-VEGF treatment was reserved for Type 1 ROP confined to zone 1 or posterior zone 2.

CONCLUSIONS

This international survey reveals considerable variability in the use of anti-VEGF therapy for ROP, including drug selection, dosing regimens, indications for treatment, and anaesthetic approaches. These disparities underscore the necessity for comprehensive, long-term research to establish standardized, evidence-based guidelines that ensure consistent and safe care for preterm infants with ROP.

ABS 2

HEMATOLOGICAL BLOOD COUNT MARKERS ON THE FIRST DAY OF LIFE IN PRETERM NEONATES WITH GESTATIONAL AGE < 32 WEEKS

S. Dimoudi, A. Nouli, K. Petraki, N. Alchatzi, A. Stamouli, Ch. Mitsiakou, D. Gialampriou, C. Tsakalidis, G. Mitsiakos

2nd Department of Neonatalogy and Neonatal Intensive Care Unit, Aristotle University of Thessaloniki, "Papageorgiou" General Hospital, Thessaloniki, Greece

INTRODUCTION

Preterm infants with a gestational age (GA) < 32 weeks exhibit significant differences in hematological markers, mainly due to the immaturity of their hematopoietic organs and the increased morbidity. These differences are crucial for clinical management and prognosis.

OBJECTIVE

The aim of this study was to compare hematological markers on the first day of life (DOL) among three groups of preterm neonates, categorized based on their GA.

PATIENTS AND METHODS

This was a retrospective study conducted in the Neonatal Intensive Care Unit (NICU) of a tertiary hospital between 2017 and 2022. The study included neonates with a GA of < 32 weeks. Blood markers on DOL, including hemoglobin (Hb), hematocrit (Ht), white blood cells (WBC), and platelets (PLT), were recorded. Perinatal risk factors, such as chorioamnionitis, hypertension, preeclampsia, and corticosteroid administration, were also documented from the obstetric history.

RESULTS

A total of 341 neonates were studied: 82 with a GA < 28 weeks (Group A), 91 with a GA of 29-30 weeks (Group B), and 168 with a GA of 31-32 weeks (Group C). Infants in Group A had the lowest mean values of Ht and Hb (**Tab. 1**). In contrast, there were no significant differences between Groups B and C. Group A also exhibited a higher mean WBC count compared to Group B, while Group B had a higher mean value than Group C (**Tab. 2**). Furthermore, differences were observed in the subpopulations of WBC (neutrophils and lymphocytes), especially between Groups A and B (**Tab. 2**). Chorioamnionitis, preeclampsia and corticosteroids were significantly different among the age groups (**Tab. 3**).

CONCLUSIONS

Hematological markers on DOL differ statistically according to GA. Extremely preterm neonates (Group A) have lower Hb and Ht levels and a higher WBC count, likely due to immaturity and inflammatory perinatal factors, respectively. Differences in WBC counts may be associated with the different incidence of chorioamnionitis in the mothers of Group A and preeclampsia and corticosteroid use in the mothers of Group B. Understanding these variations is crucial for the clinical assessment and prognosis of preterm neonates.

Table 1 (ABS 2). Hematological indices on the first day of life in very preterm and extremely preterm infants.

Parameter		Ht			Hb			PLT		
Neonatal group		Group A	Group B	Group C	Group A	Group B	Group C	Group A	Group B	Group C
N		82	91	168	82	91	168	82	91	168
Mean		45.5 [a,b]	48.8	49.3	15.0 [a,b]	16.5	16.6	231.244	243.575	248.730
Standard deviation		8.1	7.9	7.4	2.3	3.4	3.9	984.229	929.613	809.054
Percentiles	10	37.4	38.6	41.0	12.3	13.3	13.8	150.900	159.000	153.200
	50	43.9	48.9	48.9	14.9	16.3	16.5	212.500	240.000	246.000
	90	55.8	57.6	58.7	18.2	19.4	19.0	317.400	329.200	338.000

[a] Statistically significant between Groups A and B, [b] statistically significant between Groups A and C.
Group A: GA < 28 weeks; Group B: GA 29-30 weeks; Group C: GA 31-32 weeks.
GA: gestational age; Hb: hemoglobin; Ht: hematocrit; PLT: platelets.

Table 2 (ABS 2). White blood cell indices on the first day of life in very preterm and extremely preterm infants.

Parameter		WBC			Neutrophils			Lymphocytes		
Neonatal group		Group A	Group B	Group C	Group A	Group B	Group C	Group A	Group B	Group C
N		82	91	168	82	91	168	82	91	168
Mean		11.786 [a]	8.184 [c]	9.971	5.682 [a]	2.801	4.033	4.570 [a]	4.066	4.903
Standard deviation		9.095	5.015	5.405	7.834	3.221	6.105	4324	2.158	2.532
Percentiles	10	4.220	4.245	5.080	0.740	0.698	0.952	2.060	1.590	2.280
	50	8.950	6.870	8.580	2.830	1.954	2.650	3.710	3.872	4.680
	90	24.700	15.660	15.000	14.500	4.744	7.190	8.430	6.400	7.678

[a] Statistically significant between Groups A and B; [c] statistically significant between Groups B and C.
Group A: GA < 28 weeks; Group B: GA 29-30 weeks; Group C: GA 31-32 weeks.
GA: gestational age; WBC: white blood cells.

Table 3 (ABS 2). Perinatal risk factors in very preterm and extremely preterm infants.

Neonatal group	Group A	Group B	Group C
N	82	91	168
Chorioamnionitis (n)	18 [a,b]	5	11
Hypertension (n)	5	13	16
Preeclampsia (n)	2	11 [c]	9
Corticosteroids (n)	50	49 [c]	110

[a] Statistically significant between Groups A and B, [b] statistically significant between Groups A and C; [c] statistically significant between Groups B and C.
Group A: GA < 28 weeks; Group B: GA 29-30 weeks; Group C: GA 31-32 weeks.
GA: gestational age.

ABS 3

HEMATOLOGICAL DISORDERS IN NEWBORNS WITH DOWN SYNDROME: DESCRIPTION OF TWO CASE REPORTS

A. Papadopoulou[1], M. Seiranidou[1], I. Kotsios[1], A. Martinopoulou[1], E. Papakonstantinou[2], M. Sterpi[1]

[1]Neonatal Department and Intensive Care Unit, General Hospital Ippokratio, Thessaloniki, Greece

[2]Pediatric Oncology Department, General Hospital Ippokratio, Thessaloniki, Greece

INTRODUCTION

Neonates with Down syndrome are predisposed of developing various hematological disorders. Approximately 10% of these newborns develop the unique myeloproliferative disorder referred to as transient abnormal myelopoiesis (TAM). TAM resolves spontaneously within 3 months of age. After remission, there is 10-20 fold increased risk of acute myeloid leukemia (AML) in these patients. TAM and AML have common abnormalities including the GATA binding protein 1 (*GATA1*) mutation and the circulating blasts that are morphologically and phenotypically similar. In these two case reports, we describe two newborns with leukemic blood picture.

MATERIALS AND METHODS

The first case is concerning a term male neonate born via cesarean section with prenatal diagnosis for increased risk of Down syndrome. At birth the newborn had phenotypically features of Down syndrome and a petechial exanthem. The blood examination revealed severe thrombocytopenia. The second case is about a term female neonate born via cesarean section with also syndromic features resembling to Down syndrome. The patient was referred to our Neonatal Intensive Care Unit (NICU) due to leukocytosis and thrombocytosis on the 2nd day of life.

RESULTS

The karyotyping of both was pathologic consistent with trisomy 21 (47, XY, +21). In the first case, routine hemogram showed severe thrombocytopenia (min platelet count 11,000). Immune phenotyping of peripheral blood revealed 17.5% blasts with precursor markers positive for CD34 and CD45 (consequently positive for the subtypes CD4, CD7, CD33, CD117, CD441, CD42). The myelogram was also suggestive for acute megakaryoblastic leukemia. Chemotherapy was initiated on the 9th day of life. Multiple platelet transfusions were needed. Coagulation factors and liver function were not affected. *GATA1* mutation was not detected. Additional chemotherapy was not needed in the following months and the baby is under regular pediatric oncologist supervision. The second case developed leukocytosis (max white blood cell count 75,000) and thrombocytosis (max platelet count 1,330,000) that improved in the 3rd week of life. The immune phenotyping of peripheral blood showed the presence of 64% blasts with markers positive for CD4, CD7, CD33, CD71, CD117, CD41, CD42, and CD61. The screening of *GATA1* mutation with next generation sequencing (NGS) was positive. No further treatment was necessary.

CONCLUSION

The present cases highlight the varied spectrum of hematological disorders associated with Down syndrome and its heterogenous treatment options. Although the course of TAM is usually benign, there is a high risk of developing AML in the future, especially when *GATA1* mutation is present.

ABS 4

RETINAL BLOOD FLOW IN RELATION TO AGE AND WEIGHT IN INFANTS AT RISK FOR RETINOPATHY OF PREMATURITY

N. Kozeis[1,2], M. Tzitiridou[3], A. Kozei[1], M. Triantafylla[1], C. Tsenikoglou[1], E. Panagiotou[1], L. Pantsios[1], S. Tyradellis[1]

[1]Pediatric Eye Center of Greece, Thessaloniki, Greece

[2]Pediatric Eye Department, University Hospitals, Cleveland, Ohio, USA

[3]School of Healthcare Sciences, Department of Midwifery, University of Western Macedonia, Ptolemaida, Greece

INTRODUCTION

Retinopathy of prematurity (ROP) is a leading cause of preventable childhood blindness worldwide.

Laser speckle contrast imaging (LSCI), a non-invasive imaging technique, has recently been applied in the assessment of ROP due to its ability to provide quantitative, anatomically mapped data on retinal blood flow. This study explores the relationship between retinal blood flow parameters and key neonatal metrics – gestational age (GA), postmenstrual age (PMA), birth weight (BW), and current weight (CW) – in preterm infants at risk for ROP.

METHODS

In this prospective study, 26 preterm infants (36 eyes) with PMA ranging from 31 to 72 weeks underwent serial ROP screenings using binocular indirect ophthalmoscopy and LSCI over multiple timepoints.

Statistical analysis

Statistical analyses included correlation tests, mean comparisons, and linear regression. Mixed-effects models were applied to account for repeated measures and bilateral eye data.

RESULTS

Significant associations were identified between birth parameters and blood flow metrics.

CONCLUSIONS

The study found that both PMA and CW were positively correlated with increased retinal blood flow velocity as measured by LSCI. These findings suggest that age and weight should be controlled in future investigations examining the relationship between retinal perfusion and ROP stage or severity.

ABS 5

CASE REPORT OF A NEWBORN WITH AORTIC ARCH ANOMALY AND MULTIPLE HEMANGIOMAS

A. Papadopoulou[1], A. Martinopoulou[1], M. Seiranidou[1], M. Kavga[2], C. Antahopoulos[2], M. Sterpi[1]

[1]Neonatal Department and Intensive Care Unit, General Hospital Ippokratio, Thessaloniki, Greece

[2]3rd Pediatric Department, General Hospital Ippokratio, Thessaloniki, Greece

INTRODUCTION

Congenital aortic lesions are occasionally associated with clinical syndromes involving multiple cutaneous hemangiomas. We describe a neonate with noncutaneous vascular lesions in terms of hypoplastic aortic arch and coarctation of aorta.

MATERIALS AND METHODS

A 5-day-old male was transferred to our institute with the likely diagnosis of congenital cardiac disease. The patient was born via cesarian section at a gestational age of 35 weeks and 5 days with Apgar score 9 at 1 minute and 9 at 5 minutes. There were no pathological findings concerning prenatal and family history. A physical examination on the 3rd day of life revealed weak femoral pulses and a difference of blood pressure between upper limbs and lower limbs. On admission, the neonate was breathing normally without the need of oxygen supplementation. A systolic murmur grade 2 was present, left femoral artery was not palpable. An echocardiogram depicted hypoplastic aortic arch with coarctation of aorta and a small ventricular septum defect. Prostaglandin was initiated with low dose and the patient was transferred to a Cardiac Surgery Centrum.

RESULTS

A ballon angioplasty was performed at 31 days of life. The postoperative course was without complications. At 2 month of age, the infant was hospitalized because of a cervical mass. Further investigation with ultrasound and MRI contrast imaging of the brain, cervix, mediastinum, spine and abdomen, revealed multiple masses localized in cervix, mediastinum with intrathoracic invasion, spine, liver, kidney, adrenal glands as well as multiple pathological lymph nodes with abnormal signal perfusion. Due to high suspicion of metastatic neuroblastoma, laboratory tests such as hCG, aFP in blood and VMA in urine were performed and were within normal reference range. An I-MIBG scan was negative. A myelogram of the blood exhibited no blasts. Biopsy of two lesions ensued and diagnosed the presence of hemangiomas. A treatment course with corticosteroids and propranolol was initiated. Follow-up of the hemangiomas showed remission and treatment response.

CONCLUSION

Hemangiomas arising from within visceral structures without cutaneous involvement are a rare entity. The association of visceral hemangiomas and aortic arch anomalies has been reported in the literature and is uncommon. Multiple infantile hemangiomas can also mimic metastatic neuroblastoma. This is an unusual case of visceral hemangiomatosis presenting with coarctation of aorta. We highlight the infrequency of the co-existence of such anomalies and the importance of further imaging evaluation and follow-up of these patients.

ABS 6

COMPARISON OF FETAL CROWN-RUMP LENGTH MEASUREMENTS IN IVF/ICSI PREGNANCIES FOLLOWING FROZEN-THAWED VERSUS FRESH EMBRYO TRANSFER AND CORRELATION WITH NEONATAL BIRTHWEIGHT

E. Gkiougki[1], I. Tsakiridis[2], K. Mitta[2], A. Mamopoulos[2], I. Kalogiannidis[2], T. Dagklis[2], A. Athanasiadis[2]

[1]Centre Hospitalier du Nord, Ettelbruck, Luxembourg

[2]Third Department of Obstetrics and Gynaecology, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

BACKGROUND

Neonates born following frozen-thawed embryo transfer (FET) present an elevated risk of high birth weight (BW) (> 4,500 g) and being large for gestational age (LGA) (> 90th percentile) compared to those born after fresh embryo transfer (ET).

(Epi)genetic disorders involving imprinting are increased in *in-vitro* fertilization (IVF)/ intracytoplasmic sperm injection (ICSI) fetuses because of embryo culture in different media and cryopreservation techniques, ovarian hyperstimulation and alteration of uterine endocrine status; as a result, embryo implantation and fetal growth are affected.

In FET, artificially programmed cycles lead to hypothalamic-pituitary suppression and absence of the corpus luteum, increasing trophoblastic invasiveness that predisposes to neonatal macrosomia.

In fresh ET, high blood concentrations of oestradiol and progesterone following controlled ovarian stimulation may create a suboptimal environment for implantation and placentation related to fetal growth restriction (FGR).

Crown-rump length (CRL) is reported as a predictor of BW with an inverse correlation between CRL and the risk of preterm birth, small for gestational age (SGA) and low BW (LBW); a gestational age according to CRL of 2-6 days lower than the expected (calculated from the day of fertilization) is associated with a higher risk of severe prematurity and LBW, while of 3-5 days greater than expected is predictive of LGA.

OBJECTIVE

To estimate fetal growth dynamics and potential BW between cryopreserved and fresh IVF/ICSI embryos using CRL measurements.

SUBJECTS AND METHODS

This was a retrospective study (July 2010 - December 2023) of the Third Department of Obstetrics and Gynaecology, Aristotle University of Thessaloniki, Greece. A total of 3,082 IVF pregnancies including 4,044 viable embryos underwent a routine scan at 11^{+0}-13^{+6} gestational weeks (45-84 mm). Of these embryos, 1,255 (40.7%) originated from thawed transfers, whereas 1,827 (59.3%) from fresh ones. Analysis included maternal age, type of embryos (thawed vs fresh, donor vs homologous oocytes), CRL, twin and singleton gestations.

RESULTS

The mean maternal age was significantly higher in thawed than in fresh embryos (39.8 vs 35.8 years, p-value < 0.001). The mean CRL z-score was significantly elevated in thawed compared to fresh (0.309 vs 0.199, p-value < 0.001). In a subgroup analysis of singleton gestations, the mean CRL z-score was higher in thawed blastocysts compared to fresh (0.327 vs 0.215, p-value < 0.001). Concerning twins, the mean CRL z-score was higher in thawed blastocysts (0.285 vs 0.184, p-value: 0.015) and in donor compared to homologous oocytes' recipients (0.431 vs 0.191, p-value: 0.002).

CONCLUSIONS

CRL measurements during the first trimester scan were significantly increased in thawed compared to fresh embryos. As this divergence may be a first indication of the subsequent difference in sonographically estimated fetal weight and BW, CRL could contribute to the prognosis of embryonic growth trajectories.

ABS 7

MUSIC AND MUSIC THERAPY DURING PHYSIOTHERAPEUTIC INTERVENTION IN INFANTS WITH PREMATURITY, DEVELOPMENTAL DISORDERS OR OTHER CONDITIONS: A LITERATURE REVIEW

A. Drogala[1], P. Drogalas[2], L. Stamou[3]

[1]Private Physiotherapist PT, NDT, DMI, SI, CP, Music Therapist MT – MA

[2]Private Physiotherapist PT, BSc

[3]Professor, Department of Music Science and Art, University of Macedonia, Thessaloniki, Greece

Physiotherapy intervention in neonates, particularly within Neonatal Intensive Care Units (NICUs), constitutes an integral part of holistic care, contributing to the maturation of the neuromuscular

and respiratory systems. However, it is often accompanied by increased stress, crying episodes, and signs of discomfort. International literature highlights music therapy as an effective tool for sensory modulation, promoting the stability of vital functions, reducing the perception of pain, and supporting neurological development. The aim of this study is to highlight the integration of music/music therapy into physiotherapeutic practice for infants with prematurity, developmental disorders, or other conditions, with a particular focus on its application in high-demand environments such as the NICU. The study sample included infants receiving physiotherapy combined with music therapy, and the review was based on extensive literature analysis from 1980 to 2022, gathering qualitative and quantitative data on the benefits of this combined intervention. The results demonstrated significant improvements in physiological and neuro-motor functions, as well as in behavioral and emotional regulation. Furthermore, the combined therapy was associated with reduced length of hospital stay and overall improved response in both infants and parents. Application within the NICU setting proved particularly beneficial, supporting the need for the adoption of such practices to enhance early care. This study highlights the value of music therapy as a complementary technique in neonatal physiotherapeutic intervention and emphasizes the importance of establishing interdisciplinary practices within NICUs. Collaboration among physicians, nurses, physiotherapists, and music therapists is shown to be crucial in improving the quality of early care. The findings represent an important first step in Greece, promoting innovative practices in neonatal care and encouraging further research and integration of new interventions in national clinical neonatal practice.

ABS 8

AN INTERESTING CASE OF A NEONATE WITH RENAL TUBULAR ACIDOSIS

D. Tsiantouka, C. Kartsiounis, E. Papaioannou, A. Pavlaki, V. Papadopoulou, M. Sterpi

Neonatal Intensive Care Unit "Hippokrateion" General Hospital of Thessaloniki, Thessaloniki, Greece

INTRODUCTION

Metabolic acidosis is a common laboratory finding in neonates, especially in preterm infants. The causes of this may be multiple, including renal tubular acidosis. Timely investigation and recognition of the cause of metabolic acidosis is a key prerequisite for the treatment and course of the patient.

OBJECTIVE

To present an interesting case of a neonate with renal tubular acidosis from the 7th day of life as a random finding.

MATERIALS AND METHODS

A female neonate born to a primiparous mother via cesarean section due to breech presentation and onset of labor after a gestational age of 34 weeks and 1 day was admitted to our clinic immediately after birth, due to prematurity and prenatal diagnosis of bilateral hydronephrosis. During the hospitalization of the neonate, on the 7th day of life, persistent metabolic acidosis was identified in the acid-base balance, attributed to renal tubular acidosis.

RESULTS

The renal tubular acidosis was persistent, with hyperchloremia and a normal anion gap, so a complete workup was sent for further investigation. The basic laboratory tests were normal, as were the electrolytes. The urinalysis consistently showed urine pH less than 6 in multiple laboratory snapshots. A test for plasma renin and aldosterone, ammonia, lactate, serum amino acids, and urinary organic acids was sent, all of which were normal. Results of the genetic testing are pending. Due to the prenatal diagnosis of hydronephrosis, a cystourethrography was performed, which was normal. The newborn was given bicarbonates orally, with immediate correction of the metabolic acidosis.

CONCLUSIONS

Renal tubular acidosis is a major cause of metabolic acidosis in newborns, and its early diagnosis can prevent significant complications, while its treatment can improve the course and outcome for the patient. In the majority of cases, apart from the rare potentially fatal syndromes, renal tubular acidosis has an excellent prognosis with appropriate and targeted treatment.

ABS 9

HUMAN BREAST MILK miRNAs: IS MATERNAL OBESITY AFFECTING BREASTFEEDING CHILDREN IN OBESITY DEVELOPMENT?

M. Chondrogianni[1,3,4], M. Lithoxopoulou[1,4], A Lampropoulos[2,4], A Ververi[3]

[1]2nd Department of Neonatology and NICU, Papageorgiou Hospital, Thessaloniki, Greece

[2]Department of Genetics, Papageorgiou Hospital, Thessaloniki, Greece
[3]Department of Genetics for Rare Diseases, Papageorgiou General Hospital, Thessaloniki, Greece
[4]Medical School, Aristotle University of Thessaloniki, Thessaloniki, Greece

Human breast milk is already known for its benefits, in summary such as the fact that is the ideal source of infant nutrition, with varied consistency, including bioactive components and decreased development of chronic diseases. Obesity is, among others, a major health condition whose consequences spread in later life as well, making its prevention vital. Research has linked breastfeeding to protective effects against childhood obesity, defined as the accumulation of excessive body fat in children. Maternal lifestyle factors, such as diet, exercise, and eventually overweight or obesity, are likely to epigenetically influence lactating childrens' growth and obesity development. The aim of this review is to investigate the hypothesis that miRNA content in breast milk might be influenced by maternal obesity, eventually affecting obesity development in the offspring.
This systematic review was in line with the guidelines of the PRISMA 2020 statement, including observational (cohort) studies that meet the inclusion standards and compare or make clear the difference in the expression of miRNAs in overweight/obese lactating mothers and, finally, associate this to the obesity development or adipogenesis-related pathway in the offspring.
The studies in general compared the expression of miRNA content between normal weight and overweight or obese mothers and also correlated the outcomes with the possibility of obesity development in lactating children.
According to them, breast milk contains a large number of miRNAs. Studies using sequencing techniques identify some of them, while others involve pre-selected miRNAs that are abundantly expressed in breast milk and participate in adipogenesis. The most common miRNAs are miR-148a, miR-30 family, and miR-let7 family, with miR-30b and miR-let7a among the most discussed in the included studies. The major outcome indicated that miRNA consistency is dynamically modified through the lactation period. MiR-148a indicates a protecting role from obesity in infants and eventually from type 2 diabetes, making miR-148a a crucial predictor of infant growth and gaining fat during infancy. Apart from that, the correlation between miR-30b and pre-pregnancy BMI shows that, as the maternal BMI increases, it leads to metabolic obesity-related problems, as well as higher risk of obesity development and other co-morbidities. Additionally, its association with weight gain during pregnancy may indicate a protective mechanism that guarantees sufficient intake of energy and enhancement of healthy fat tissue growth. Based on this, exposure to high levels of miR-30b may act along with fat mass increase in infants. Finally, the results indicate a crucial role of miR-let7a in deciding whether an infant will become obese.
Eventually, even though many separate miRNAs may be involved in infant development, the overall miRNA profile remains stable. These highlight the significance of maternal balanced nutrition and health during the lactation period.

ABS 10

LUNG ULTRASOUND VS CHEST RADIOGRAPHY DIAGNOSIS AND MANAGEMENT OF NEONATE RESPIRATORY DISTRESS SYNDROME IN THE NICU

A. Moutafi, M. Diamantopoulou, P. Markopoulou, M.I. Apostolou, K. Katechi

A' NICU (Neonatal Intensive Care Unit),"Agia Sofia" Children's Hospital, Athens, Greece

BACKGROUND AND AIMS

The use of imaging for the diagnosis and monitoring of respiratory diseases in the Neonatal Intensive Care Unit (NICU) is essential. For this purpose, in recent years, lung ultrasound has been increasingly used by neonatologists internationally in addition to chest radiography.
In the present study, the two methods were compared in terms of their specificity and sensitivity as imaging tools for the management of respiratory distress syndrome (RDS).

METHODS

This is a comparative study of the imaging findings of neonates with RDS who were hospitalized in A' NICU of Children Hospital Agia Sofia (Athens, Greece) during the period 2022-2023. The methods used were chest X-ray reviewed by a neonatologist and lung ultrasound at the same time performed and reviewed also by the same person. The results were statistically analyzed .

RESULTS

The study included 50 neonates > 32 weeks of age, of which 60% suffered from RDS, and 40% of them required surfactant. Characteristic imaging findings

for the disease were present in 90% of neonates in both methods, while in 10% the chest X-ray was not diagnostic in contrast to the lung ultrasound. In neonates who ultimately required surfactant, the imaging that met the criteria earlier was ultrasound (17%).

In addition, an improvement in lung imaging was observed with the improvement of clinical symptoms, at the same time in both methods.

CONCLUSIONS

The use of lung ultrasound in NICU for the diagnosis of RDS in the present study had 100% sensitivity and 98% specificity. Correspondingly, chest radiography had 96% sensitivity and 98% specificity. The improvement of the disease was depicted at the same time with both methods. More serious findings are visualized earlier on lung ultrasound, which also corresponded to the necessity of surfactant administration in a significant percentage of newborns.

ABS 11

DESCRIPTIVE EPIDEMIOLOGICAL STUDY OF PRETERM NEONATES OF GESTATIONAL AGE < 32 WEEKS AND THROMBOCYTOPENIA

S. Dimoudi, A. Nouli, K. Petraki, N. Alchatzi, A. Stamouli, Ch. Mitsiakou, D. Gialamprinou, Ch. Tsakalidis, G. Mitsiakos

2nd Department of Neonatology and NICU, Papageorgiou Hospital, Thessaloniki, Greece

INTRODUCTION

Thrombocytopenia is commonly observed among very preterm hospitalized infants and it has been associated with increased morbidity and mortality.

PURPOSE

To investigate the incidence and risk factors of thrombocytopenia in very preterm infants with gestational age < 32 weeks

PATIENTS AND METHODS

A descriptive epidemiological retrospective study was conducted at the Neonatal Intensive Care Unit (NICU) of Papageorgiou General Hospital (Thessaloniki, Greece) for the years 2017-2022. All the very preterm infants with thrombocytopenia defined as a platelet count ≤ 150,000/μL were included. Thrombocytopenia was classified into early-onset (thrombocytopenia occurring < 72 hours after birth) and late-onset (thrombocytopenia occurring > 72 hours after birth).

RESULTS

A total of 343 neonates were studied, of which 115 (33.5%) developed thrombocytopenia (**Tab. 1**). 64.3% of the neonates with thrombocytopenia presented with early-onset thrombocytopenia, and 35.6% presented with late-onset thrombocytopenia (**Tab. 2**). The group of neonates with

Table 1 (ABS 11). Characteristics of neonates with and without thrombocytopenia (n = 343).

Characteristics	Thrombocytopenia	Non-thrombocytopenia	p
N	115 (33.5%)	228 (66.5%)	-
Birth weight	1,099 ± 367	1,417 ± 363	**< 0.001**
Gestational age	28.5 ± 2.1	29.8 ± 1.68	**< 0.001**
Gender (male)	57 (49.5%)	106 (46.4%)	n/s
Chorioamnionitis	14 (12.1%)	21 (9.2%)	n/s
Hypertension	17 (14.8%)	17 (7.4%)	**0.028**
Preeclampsia	10 (8.6%)	12 (5.2%)	n/s
Gestational diabetes mellitus	9 (7.8%)	45 (19.7%)	**0.002**
Aspirin	28 (24.3%)	27 (11.8%)	**0.006**
Low molecular weight heparin	34 (29.5%)	59 (25.8%)	n/s
Sepsis	20 (17.3%)	10 (4.3%)	**< 0.001**

Table 2 (ABS 11). Characteristics of neonates with early-onset and late-onset thrombocytopenia (n = 115).

Characteristics	Early-onset thrombocytopenia	Late-onset thrombocytopenia	p
N	74 (64.3%)	41 (35.6%)	-
Birth weight	1,056 ± 371	1,178 ± 351	n/s
Gestational age	28.3 ± 2.1	28.7 ± 2.09	n/s
Sex (male)	34 (45.9%)	24 (58.5%)	n/s

thrombocytopenia had a significantly lower birth weight (1,099 ± 367 g vs 1,417 ± 363 g, p < 0.001) and shorter gestational age (28.5 ± 2.1 vs 29.8 ± 1.68 weeks, p < 0.001) (**Tab. 1**). Aspirin use during pregnancy was more frequent in the thrombocytopenia group (24.3% vs 11.8%, p = 0.006), while gestational diabetes mellitus was more prevalent in the non-thrombocytopenia group (19.7% vs 7.8%, p = 0.002) (**Tab. 1**). Neonates with thrombocytopenia exhibited a higher incidence of bronchopulmonary dysplasia (19.1% vs 5.7%, p < 0.001), retinopathy of prematurity (10.4% vs 1.3%, p < 0.001), and sepsis (17.3% vs 4.3%, p < 0.001) (**Tab. 1** and **Tab. 3**). Survival did not differ significantly between the groups (**Tab. 3**).

CONCLUSIONS

Thrombocytopenia is common in neonates < 32 weeks of gestation with lower gestational age, lower birth weight, aspirin use during pregnancy, and increased morbidity. Early identification of risk factors and diagnosis of thrombocytopenia may contribute to the management of thrombocytopenia and associated morbidity.

Table 3 (ABS 11). Outcome of neonates with and without thrombocytopenia (n = 343).

Outcome	Thrombocytopenia	Non-thrombocytopenia	p
N	115 (33.5%)	228 (66.5%)	-
Hemorrhage	7 (6%)	6 (2.6%)	n/s
Bronchopulmonary dysplasia	22 (19.1%)	13 (5.7%)	**< 0.001**
Retinopathy of prematurity	12 (10.4%)	3 (1.3%)	**< 0.001**
Survival	113 (98.2%)	226 (99.1%)	n/s