September 23rd, 2023 08:00 - 09:00

POSTER WALK – 4I 2

ID 838. PASSIVE MATERNAL ANTI-RSV IMMUNIZATION IS INFLUENCED BY THE SEASON OF BIRTH

Doctor Maria Giulia Conti[1], Doctor Leonardo Sorrentino[2], Doctor Lucia Lelli[1], Doctor Giorgio Fravolini[1], Doctor Eleonora Cresta[1], Doctor Laura Petrarca[1], Doctor Greta Di Mattia[1], Professor Enea Bonci[1], Professor Alessandra Pierangeli[2], Professor Raffaella Nenna[1], Professor Fabio Midulla[1]

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Background. Seasonal Respiratory syncytial virus (RSV) bronchiolitis continues to be a global health concern. There are no vaccines available against RSV; passive and temporary immunization strategies i.e., monoclonal antibodies (Ab), are used to protect vulnerable newborns. Several studies suggested that maternal anti–RSV Ab transferred through the placenta or via breast milk may protect the baby against severe bronchiolitis. Hypothesis. Maternal RSV exposure during pregnancy influences the concentration of RSV Ab transferred from the mother to the offspring. Aim. To evaluate anti–RSV Ab values in maternal blood, cord blood and breast milk samples, according to RSV season.

Methods. Mother–infant dyads were enrolled at Policlinico Umberto I in Rome, Italy, between Nov 2021 and Jan 2023 and divided in Group E, recruited during the RSV epidemic period (Nov–Jan) and Group nE, recruited outside the epidemic period

(Feb–Oct). Anti–RSV IgG and IgA were detected by ELISA test in samples of maternal peripheral blood, umbilical cord blood and breast milk collected after delivery.

Results. Eighty–eight dyads were enrolled; 30 dyads were assigned to Group E and 58 to Group nE. The mean anti–RSV IgG values in maternal and cord blood samples of Group E were significantly higher than in Group nE, (53.3 RU/ml vs 82.6 RU/ml; p=0.002 and 80.2 RU/ml vs 103 RU/ml; p=0.011 respectively). Similarly, mean anti–RSV IgA values in breast milk were higher in Group E than in Group nE (0.74 sample OD/Calibrator OD vs 1.15 sample OD/Calibrator OD; p=0.09).

Conclusions. Birth season influences the level of neonatal RSV–specific antibodies received by the mother. Our results could guide future RSV vaccination strategies.

None declared

ID 883. SECONDARY GAINS OF STRATEGIES TO PREVENT COVID 19 INFECTION IN NEONATAL INTENSIVE CARE UNIT: HAS THE FREQUENCY OF HEALTHCARE-ASSOCIATED INFECTIONS DECREASED ?"

Professor Ali Bulbul[1], MD Hasan Avsar, MD Evrım Kıray Bas, MD Hasan Sinan Uslu, MD Ebru Türkoglu Unal, MD Alper Divarcı

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Backgraund: We aimed to compare the frequency and distribution of healthcare associated infections in the neonatal intensive care unit at two different times (during pre–COVID–19 period and during COVID–19 period). Our hypothesis as infection control measures taken due to COVID 19 infection have a positive effect on reducing the frequency of healthcare–associated infections in the neonatal intensive care unit.

Method: Our study was conducted between March – September 2019 (pre–COVID–19 period) and March – September 2020 (during COVID–19 period), in our Neonatal Intensive Care Unit. All cases with hospital–acquired infections were included and demographic characteristics (gestational age, diagnosis, gender, weight, mode of delivery), interventional procedures (mechanical ventilation, central catheter, urinary catheter and its durations), feeding style (breast milk, formula, total parenteral nutrition and its durations), morbidity and mortality and infection foci were recorded in the case follow–up form. The data obtained in the two periods were compared.

Results: During the determined study period, it was determined that a total of 957 babies were hospitalized and treated, including 427 babies in the pre–COVID–19 period and 530 babies in the COVID–19 period. Healthcare–associated infections incidence density were found 5.43 and 4.87 in pre–COVID–19 and COVID–19 period,

respectively. During the COVID–19 period, there was a significant decrease in the healthcare–associated infection incidence density, hospital–associated infection rate and bloodstream infection (p:0.009). No statistical difference was found in catheter–related infection rate (p:0.35), and VAP–related infection rate (p:0.19).

Conclusion: It has been determined that COVID–19 infection prevention strategies reduce the frequency of healthcare associated infection especially in bloodstream infection in neonatal intensive care units.

None declared

ID 840. SARS-cov2 infection in neonates: experience of the neonatal intensive care unit of Sousse. Tunisia

Doctor Oussama Mghirbi[1,2,3], Dr mariem barka[1,2,3], Dr Amani Khalifi[1,2,3], Dr Donia Brahem[1,2,3], Dr Maha Taamli[1,2,3], Pr Sonia Nouri[1,2,3], Pr Nabiha Mahthaoui[1,2,3]
[1]Farhat Hached University Hospital, Sousse, Tunisia, [2]Neonatal Intensive Care Unit, Sousse, Tunisia, [3]Laboratory LR: 14ES05, Sousse, Tunisia

Background: The SARS–CoV–2 viral infection is known for its rapid global progression. In adults, it can cause a severe respiratory distress syndrome that can be fatal. Initially, neonates and infants were believed to be spared from such complications, but sufficient data is now available to assess the accuracy of this statement.

Methods: We conducted a retrospective monocentric study in the third level NICU of the Farhat Hached University Hospital in Sousse over a period of three years, from March 1, 2020, to March 1, 2023. Our aim is to describe the epidemiological aspects, clinical presentations, diagnostic methods, and patient outcomes in our unit for confirmed cases of SARS–CoV–2 infection.

Results: Out of 204 patients suspected of having COVID–19 infection, only 26 cases (12.7%) were confirmed. The median age on admission was 10 days, and the sex ratio was 0.52. Among the confirmed cases, twenty were diagnosed through RT–PCR, and six patients had a positive result on a rapid test. Five patients acquired the infection during their hospital stay, and 50% of the patients had a positive viral contact with a symptomatic parent.
The major symptom observed was fever, present in 91% of the population, with a median temperature of 38.5 degrees Celsius. In 83.3% of cases, fever resolved within

48 hours. Only 30% of patients presented with mild respiratory symptoms. Three patients developed a severe respiratory distress syndrome requiring mechanical ventilation. These patients also had nosocomial infections with COVID–19 and were very premature, with low birth weight and comorbidities. Up to 85% of patients did not require any form of ventilation support, and 95% did not show any biological inflammatory response markers. Two patients had associated urinary tract infections. The median duration of hospitalization was 6 days. Unfortunately, one patient died on the fourth day of admission due to septic shock.

Conclusion: COVID–19 infection in neonates appears to mostly manifest with mild symptoms, although there are a few cases of severe respiratory distress syndrome. Fever is consistently present, and bacterial coinfection remains rare. A prophylactic approach may be considered to minimize hospitalization and its associated complications for this vulnerable population.

None declared

ID 574. VESTIBULAR FUNCTION IN A COHORT OF CHILDREN WITH CMV CONGENITAL INFECTION

Doctor Serena Salomé[1], Doctor Francesco Paolo Malvone[1], Doctor Filomena Rosaria Corrado[1], Doctor Fiorentino Grasso[1], Professor Letizia Capasso[1], Professor Rita Malesci[2], Professor Anna Rita Fetoni[2], Professor Francesco Raimondi[1]
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BACKGROUND: Congenital cytomegalovirus infection (cCMV) is the most frequent nonhereditary cause for sensorineural hearing loss (SNHL) in children. Data on vestibular function in children with cCMV are, however, scarce, although some evidence for cCMV–associated vestibular dysfunction exists. In this prospective cohort study, we evaluated long–term vestibular function and hearing outcomes in a cohort of children with cCMV.

METHODS: Patients with cCMV from 4 years old were enrolled. Auditory evoked potentials (AEPs), audiometric infantile examination, otoacoustic emissions, oculovestibular reflex (VOR), Head Shaking Test, Video Head Impulse Test, vestibular evoked myogenic potential were performed.

RESULTS: Twenty–nine patients were enrolled between 4 and 8 years old. Nine children (31%) presented with symptomatic infection till neonatal period, and four of them (44%) had hearing loss. Impaired vestibular function was detected in seven patients (7/29, 24%). All children except one (6/7, 86%), were born after maternal primary infection during pregnancy; in one case, the type of maternal infection was

not valuable. Five of them (5/7, 71%) presented with symptomatic onset of infection with cerebral anomalies at birth, such as germinolytic cysts, cerebral calcifications and ventriculomegaly, in all 5 patients and in 2 cases (40%) associated with impaired auditory function (unilateral SNHL of moderate degree in one case and deafness in the other). Psychomotor developmental delay characterized by psychoaffective immaturity has been described in one of these patients (1/5, 20%). In no case ocular abnormalities were found. Two patients (2/7, 29%) were completely asymptomatic both at onset and when vestibular evaluation was performed. In these patients other causes of vestibular disfunctions were rouled out (even with a cerebral MRI).

CONCLUSION: Our study evaluates a possible vestibular damage associated or not with the cochlear damage. Data showed that a vestibular disorder is present in a relevant number of children (24%), especially but not only in symptomatic infected ones, more described before. Vestibular dysfunction occurred both in children with and without SNHL. Based on these data, inclusion of vestibular tests in follow–up protocol of cCMV should be considered. Our cohort is younger than the ones described before demonstrating that this evaluation is possible earlier than previous supposed.

None declared

ID 964. LONG TELOMERES ARE PRESERVED IN VERY PRETERM INFANTS OVER THE FIRST THREE MONTHS OF LIFE

Professor Kajsa Bohlin[1], Ewa Henckel[1], Pia Österman[2], Mattias Landfors[2], Sofie Degerman[2]

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Background

Telomere length reflects cellular aging and shorter telomeres are associated with cardiovascular and chronic lung disorders; diseases that children born very preterm are at increased risk of developing in adulthood. At birth, preterm born infants have longer telomeres than those born at term, but what determines the subsequent shortening rate is still a knowledge gap. We have previously reported that telomere shortening rate is not accelerated during the first 2 years of life in children born moderately/very preterm. The aim was to further investigate the impact of neonatal stress and need for intensive care on telomere length in a larger cohort of very/extremely preterm infants.

Methods

Relative telomere length (RTL) was measured by quantitative PCR in leucocyte–derived DNA from whole blood samples collected at birth and 3 months chronological age in preterm infants born <30 weeks gestation and term control infants born at Karolinska University Hospital. Perinatal information and neonatal morbidity data was recorded prospectively.

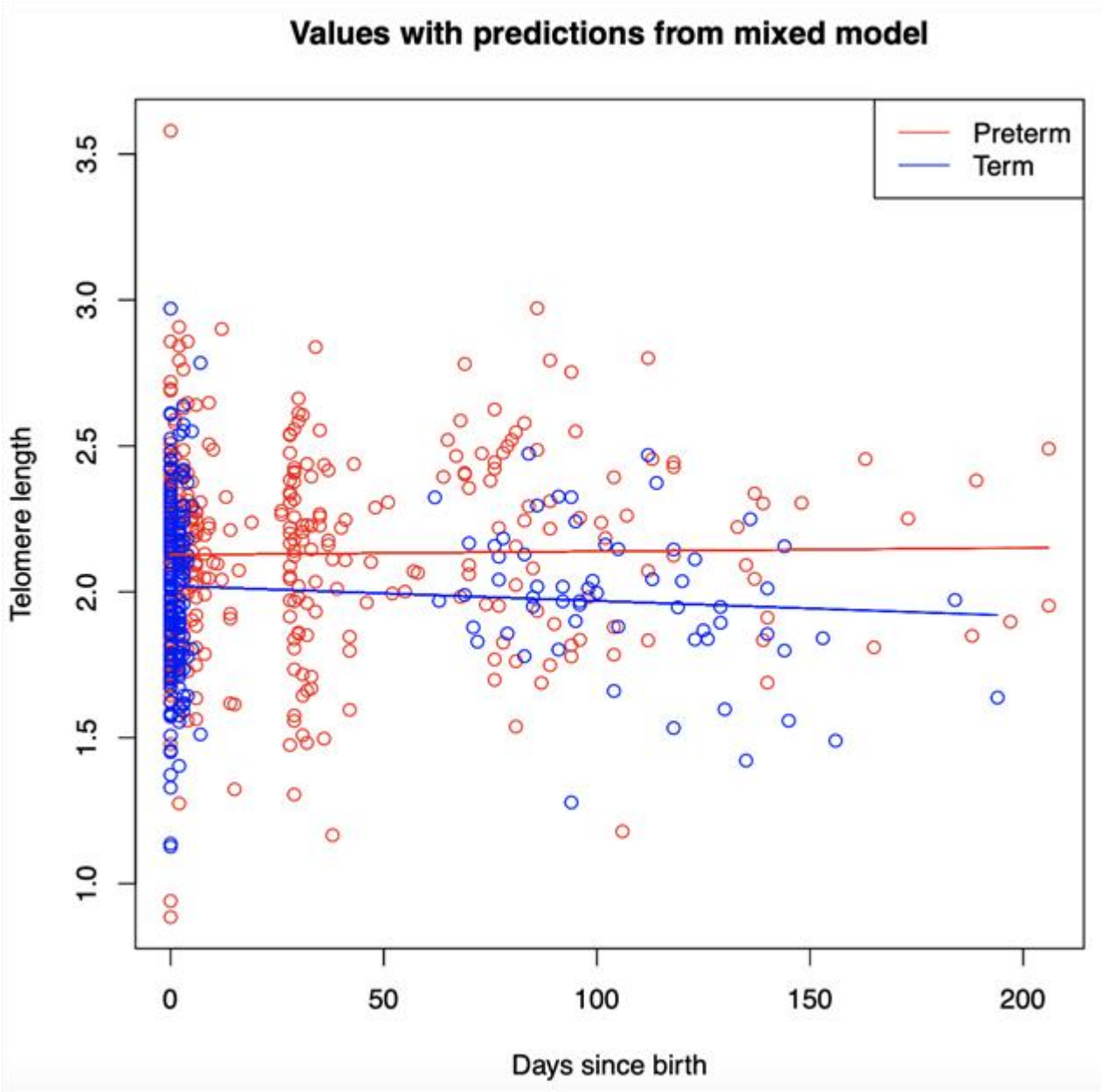
Results

We included, 103 preterm and 96 term born infants. In the preterm group, median gestational age was $27^{4}/_{7}$ (range $24^{2}/_{7}$ – $29^{6}/_{7}$) weeks and birth weight 994 g

(range 458–2045). RTL was significantly longer in preterm compared to term infants at birth and the difference increased at 3 months. The figure shows a predictive model of mean RTL over time describing less telomere shortening in the preterm group. Major morbidities (bronchopulmonary dysplasia, persistent ductus arteriosus, necrotizing enterocolitis, intraventricular hemorrhage and/or retinopathy) was not associated to RTL at 3 months or delta–RTL over time in the preterm group. No gender differences in RTL were detected.

Conclusion

Long telomeres at birth in very/extremely preterm infants are preserved during the period of neonatal intensive care and remain longer at term corrected age compared to term infants at birth. The results indicate that stress and morbidity following preterm birth does not affect cellular aging in the short perspective. Further studies are needed to more in depth investigate other factors, such as blood cell composition and inflammation, that could affect the telomere measurements in infants born preterm.



None declared

ID 847. The Role of Delta Neutrophil Index in Early Prediction of Retinopathy of Prematurity

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Background: Delta neutrophil index (DNI) shows leucocyte differentiation and calculated while CBC is performed. This study aim to evaluate the relationship between serum delta neutrophil index (DNI) and development of retinopathy of prematurity (ROP).

Method: The data of infants who were screened for ROP and who had DNI results within the firs 24 hours of life were collected. The risk factors for development ROP and results of DNI, lymphocyte and white blood cell(WBC) count were recorded retrospectively. The results were compared between infants with and without ROP.The association between risk factors and the development of ROP were analyzed using univariate analysis and multivariate logistic regression analysis. Receiver operating characteristic (ROC) curve analysis was used to determine the power of DNI to differentiate groups.

Results: Infants with a gestational age of < 34 week were screened for ROP. A total of 229 infants were included: 66 with any ROP and 163 without ROP. Twenty– two infants required treatment for ROP. A lower birthweight, smaller gestational age, late–onset sepsis (culture proven) and DNI were identified as independent risk

factors for development ROP. The area under the ROC curve for DNI was 2.35 (AUC 0.674), predicted ROP with a sensitivity of 71.2% and specificity of 54 %.

Conclusion: These findings reveal that in addition to prematurity and lower birthweight, DNI on the first postnatal day has a prognostic value in the development of ROP and early assessment of DNI levels may help predict the development of ROP in premature infants.

Table 1: Demographic Characteristics patients with ROP and and no ROP groups

	Any ROP (n=66)	No ROP(n=163)	p
Gestational age*	27.5 (23-32)	31(26-34)	<0.001
Birth weight**	1059±311	1594 ± 349	<0.001
Male gender, n (%)	36 (53.7)	82 (50.6)	0,662
C/S, n (%)	51(76.1)	140 (86.4)	0,078
SGA, n (%)	12 (18.2)	24 (1.,7)	0,325
Resuscitation at birth, n (%)	27 (40,3)	31 (19.1)	0,001
Invasiv mechanical ventilation, day*	1.5 (0-102)	0 (0-29)	< 0.001
Total oxygen day*	35 (0-174)	3 (0-110)	<0.001
Late Onset Neonatal sepsis (culture proven), n (%)	17 (25,4)	4 (2,5)	<0.001
Bronchopulmonary dysplasia,n (%)	19 (28,4)	5 (3,1)	<0.001

*The values were given as median (minumum- maximum)

**The values were given as mean±SD

Table 2: Multivariate predictors of development of ROP in study population

Variable	Multivariate analysis	
	Odds ratio (95% CI)	P value
Gestational age	1.535 (1.103- 2.136)	0.011
Birth weight	1.003 (1.001- 2.136)	0.003
Late Onset Sepsis	0.155 (0.026- 0.909)	0.039
Delta neutrophil index	0.916 (0.841-0.998)	0.045

None declared

ID 626. ANAKINRA (IL1 RECEPTOR ANTAGONIST) AND IMMUNE DYSFUNCTION IN PRETERM INFANTS

Doctor Philip Anthony Stewart[1,2,3], DR Aoife Branagan[1,2,3], Dr Johana Isaza-Correa[1,2], Dr Lynne Kelly[1,2], Dr Judith Meehan[1,2,3], Dr Jana Semberova[3], Prof Eleanor Molloy[1,2,3,4]
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BACKGROUND:
Preterm infants have an increased risk of death and multi organ dysfunction throughout life. Preterm infants have dysregulated inflammatory responses to sepsis and necrotising enterocolitis which are linked with early multiorgan dysfunction and long-term neurodevelopmental outcomes. Inflammasomes are multiprotein complexes that generate interleukin-1 family cytokines and is implicated in bronchopulmonary dysplasia, neonatal sepsis and white matter damage in preterm infants. Diminishing these responses with immunomodulation may reduce multiorgan injury in preterm infants.
Anakinra (Interleukin-1 receptor antagonist) is a short-acting recombinant interleukin receptor antagonist that has been safely used in neonates. Our aim was to assess the impact of ex-vivo anakinra (IL1-Ra) treatment on immune function of preterm infants as a potential therapeutic agent.

METHODS:

We performed a prospective cohort study, recruiting preterm infants <1500g and <32 weeks undergoing blood tests in the first few weeks of life. Blood samples were treated with anakinra and compared with term neonatal controls.

Using flow cytometry, Toll–like receptor (TLR)–4 (recognition of lipopolysaccharide (LPS)) and CD11b (cell activation, migration) was analysed as a marker of innate immune function in neutrophils (CD66b+) and monocytes (CD14/16).

RESULTS:

Preterm infants and their controls (n=15) did not have significant differences in neutrophil or total monocyte CD11b or TLR4. However, classical monocytes CD11b was significantly upregulated in preterm samples with LPS treatment compared to controls (p value 0.0336), Non classical monocyte CD11b was significantly increased in preterm infants treated with LPS and anakinra compared to term neonates (p value 0.044). Anakinra treatment did not significantly affect to any of these. parameters.

CONCLUSION:

Immune function is significantly altered in term infants compared to preterm infants and these dysregulated responses may increase risk of infection. Immunomodulation has great potential in preterm infants in view of their multiple end organ issues such as retinopathy of prematurity and bronchopulmonary dysplasia. Ex vivo treatment with anakinra appears to not be an effective agent in altering endotoxin responses in preterm infants.

None declared

ID 1002. FETAL INFLAMMATORY RESPONSE SYNDROME PREDICTS EARLY-ONSET SEPSIS AND CYSTIC PERIVENTRICULAR LEUKOMALACIA IN PRETERM INFANTS

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Introduction: Fetal inflammatory response syndrome (FIRS) may coexist with chorioamnionitis and is diagnosed histologically when chorionic vasculitis and umbilical phlebitis or funisitis are present in the pathological exam of the placenta. FIRS is associated with poorer neonatal outcomes. The aim of this study was to evaluate the association between FIRS and neonatal outcomes in preterm infants.

Methods: We performed a retrospective cohort study at a level III neonatal intensive care unit (NICU), from January 1st 2008 to December 31st 2022, including all inborn neonates with a gestational age below 30 weeks. Infants were grouped in two groups (with and without FIRS) according to the placental study.

Results: The study included 113 infants, of which 27 (23.9%) had FIRS. After adjusting to gestational age, prolonged rupture of membranes and preeclampsia, FIRS was independently associated with the development of early-onset sepsis (OR=7.3, p=0.021) and cystic periventricular leukomalacia (OR=4.6, p=0.004).

Conclusion: The authors highlight the importance of early detection and management of FIRS in order to improve neonatal outcomes as it seems to be an important predictor of early–onset sepsis and adverse neurologic outcomes.

None declared

ID 368. IMPACT OF EARLY ONSET SEPSIS ON THE OUTCOME BEFORE DISCHARGE IN PRETERM VERY LOW BIRTH WEIGHT

Doctor Yin Ting Chen[1], Doctor Hsiao–Han Yang[1], Doctor Kuan–Tzu Huang[1], Doctor Hao–Wen Cheng[1], Doctor Ming–Luen Tsai[1], Doctor Hsiang Yu Lin[1], Doctor Hsiao–Yu Chiu[1], Doctor Hung–Chih Lin[1]

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Background: The study was tried to explore the impact of early– onset–sepsis (EOS) on outcomes before discharge in preterm very low birth weight infants (PVLBW) in Taiwan.

Methods: This was a cohort study on infants weighing less than 1500g with a gestational age below 32 weeks between 2016 and 2019. The data was from the Taiwan Neonatal Network. EOS was defined as culture–proven of blood culture. PVLBW who did not had EOS and the gestational age were within one week compare to EOS were selective as control. Severe outcomes as severe intraventricular hemorrhage (IVH), cystic PVL, bronchopulmonary dysplasia(BPD), severe retinopathy of prematurity (ROP) were assessed.

Results: Of 3466 eligible PVLBW neonates, 81 occurred EOS and 3385 were non–EOS. The mean of NICU admission days, NEC incidence, PDA and hearing result revealed no significant differences. The frequency of IVH III and IV and BPD were significant higher in the EOS group. The overall mortality was 27.16% (22 of 81). There were significant differences in terms of gestational age (26.1 weeks vs. 30.1 weeks) and birth weight (752 g vs. 1050 g) between the death and survival groups. After adjustments based on the difference in gestational age and birth weight

between the 2 groups, E.coli (odds ratio [OR], 42; 95% confidence interval[CI], 1.4–1,281.8) was found to be the most common pathogen associated with fatality.

Conclusion: In our study, EOS among VLBW–infants significantly increased the risk of severe IVH and BPD. As shown in previous reports, EOS continues to be a problem. We need to search more strategies for improving the outcomes.

	Non-EOS	EOS	P value
Apgar_score ≤ 5	415 (12.31%)	23 (28.75%)	<0.001
Cardiopulmonary resuscitation at birth (intubation)	1281 (37.84%)	44 (54.32%)	0.003
pH < 7.25 on admission	1024 (30.73%)	34 (42.5%)	0.025
Pneumothorax	192 (5.67%)	12 (14.81%)	0.002
PPHN	357 (10.55%)	18 (22.22%)	0.001
Severe ROP	461 (30.27%)	9 (28.13%)	0.794
BPD	1158 (34.57%)	34 (44.74%)	0.066
RDS use Surfactant	1630 (48.15%)	45 (55.56%)	0.188
IVH Ⅲ and Ⅳ	340 (10.04%)	20 (24.69%)	<0.001
Cystic PVL	223 (6.73%)	9 (12%)	0.074
Late-onset sepsis	336 (10.25%)	13 (19.4%)	0.015
Discharge			<0.001
Death	390 (11.52%)	22(27.16%)	

Outcomes of Non–EOS and EOS

Outcomes of Non–EOS and EOS

None declared

ID 1016. VARIATION IN INDICATIONS AND PRACTICE IN LUMBAR PUNCTURE FOR EARLY ONSET NEONATAL SEPSIS IN THE UNITED KINGDOM

Doctor Jo Barnden[1], Doctor David Bartle, Doctor Ravi Poorun

[1]Royal Devon And Exeter, Exeter , United Kingdom

Background

We observed variation in guidance and practice regarding indications for lumbar puncture (LP) in early onset neonatal sepsis (EOS) in the UK. In 2012, National Institute Health and Care Excellence (NICE) guidance included considering LP of C-Reactive Protein (CRP) >10mg/L(1). Guidance was poorly adopted and criticised for resulting in over-investigation where used (2). Updated NICE guidance in 2021 removed CRP as an indication for LP(3).

Despite this, an audit of neonatal LP in 181 babies at Royal Devon and Exeter Hospital revealed that in 91% of infants who had a LP for possible EOS the indication was raised CRP. Of these, 44 (24%) babies had a CRP <20mg/L.

We sought to ascertain whether we over-investigate with LP for EOS by comparing our practice to that in other units in the UK.

Methods

A nationwide freedom of information request asked 120 UK NHS Trusts their local indications for LP in EOS. 75 trusts responded. We compared indications for LP, whether CRP is an independent indication and whether trusts used a fixed threshold for LP or a value at which to consider LP.

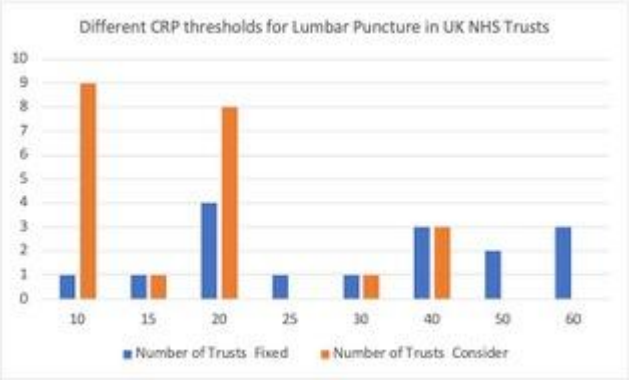
Results

Of the 75 trusts included, 38 use a CRP threshold value as an indication for LP in their guidelines. These range from 10 mg/L to 60 mg/L. In 17/38 trusts this is a fixed threshold. Results cautiously suggest that trusts using CRP thresholds perform fewer LPs (accepting the limitations of FOI data).

Conclusion

This national survey shows that, despite the changes to NICE guidance in 2021, CRP remains widely used in the decision-making regarding LP for many centres in the UK and continues to be an independent indication for LP in many centres. There were large differences in the thresholds used between units.

We have updated our guideline to include CRP threshold values for LP (consider at >20mg/L, fixed indication at 40mg/) in otherwise clinically well babies to reflect the role CRP plays in medical decision making. This could reduce the number of babies having LPs by ~60 cases per year.



Bar chart showing the range of CRP thresholds and number of UK NHS trusts using each threshold in their Early Onset Sepsis Guideline

Bar chart showing the range of CRP thresholds and number of UK NHS trusts using each threshold in their Early Onset Sepsis Guideline

None declared

ID 628. EVALUATION OF CLINICAL FINDINGS, LABORATORY RESULTS AND nSOFA SCORING IN PREDICTING NEONATAL LATE-ONSET SEPSIS

Doctor Kübra Gökçe Tezel[1], Doctor Oğuzhan Tezel[1], Asst. Prof. Dr. Eda Kepenekli[1], Prof. Dr. Eren Özek[1]

[1]Marmara University, İstanbul, Türkiye

Introduction: Sepsis is a leading mortality and morbidity cause in the neonatal period. Late–onset neonatal sepsis is referred to the event that happened during 1st month of life after the 72nd hour of life. It is both challenging and lifesaving to recognize late–onset neonatal sepsis in the early course. Making a definite diagnosis and early antibiotic administration is related to better outcomes. nSOFA (neonatal sequential organ failure assessment) designed by Wyn et al, is used to predict neonatal sepsis mortality/morbidity outcomes and has not yet been used as a diagnosis tool for neonatal sepsis. This study aims to show the power of clinical findings, laboratory results, and nSOFA scores to diagnose late–onset neonatal sepsis in an early course.

Materials and Method: In this study, babies older than 72 hours old and hospitalized between February 2021– July 2022 in Marmara University Pendik Training and Research Hospital were prospectively enrolled. Neonates were grouped as ‘culture positive sepsis’, ‘clinical sepsis’, ‘probable sepsis’, and ‘control’ while clinical, laboratory findings, and nSOFA scores were noted. It is aimed to show the efficiency of these features to predict late–onset neonatal sepsis.

Results: Out of all 203 newborns included in this study, 110 (%54) were male and 93 (%46) were female. Out of all newborns, 48 (24%) of them were in the control group, 37 (18%) of them were in the clinical sepsis group, 94 (46%) of them were in the

probable sepsis group, 24 (12%) of them were in culture positive sepsis group. It has been concluded that leukocyte count is higher than > 15.000/mm3, establishing positivity in CRP result in between 6–12 hours, “sick appearance” and nSOFA score >1 are reliable parameters to predict culture–positive sepsis.

Discussion and Conclusion: In order to anticipate neonatal culture–positive sepsis, using the nSOFA scoring system with clinical and laboratory findings is feasible. Integration of this scoring system into daily clinical practice would lead to diminished usage of empiric antibiotics. Further studies with larger cohorts will strengthen our results.

None declared

ID 1042. Gram-negative neonatal sepsis in Macedonia a lower-middle-income country - concern for multidrug resistance and need for international antimicrobial resistance surveillance

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[1]University Children Hospital, Skopje, Macedonia

Background: Neonatal sepsis remains a significant cause of childhood mortality with marked disparities across world regions and countries. . Gram–negative bacteria are becoming increasingly predominant in neonatal sepsis, particularly in lower–middle–income countries (LMICs), with growing concern of multidrug resistance. Thus, it is clear the presence of gap between evidence–based empiric guidelines and regional epidemiological and changing patterns of microbial resistance between the different countries.

Methods: A retrospective analysis was conducted on positive blood cultures from the neonates evaluated for neonatal sepsis at Neonatology Department, University Children Hospital in Skopje, North Macedonia. Two time periods were analyzed: 2014 –2018 and 2019–2022. Data was collected from positive blood cultures in all infants aged 0 to 30 days of life. Repeat blood cultures where the same organism was detected were excluded from analysis. The frequency of common organisms and their antimicrobial susceptibilities were analyzed using descriptive statistics and Chi Square or Fisher's exact test for comparison between the subgroups.

Results: Late–onset sepsis (66.1%) predominated over early–onset sepsis (33.9%). Almost equally distribution was observed between gram–positive (48.9%) and gram–negatives organisms (51.1%). Common pathogens included coagulase–negative staphylococci (42.8%), Klebsiella pneumoniae (32.6%), Escherichia coli (14.4%), Enterococci (6.1%), and Pseudomonas aeruginosa (4.1%). Fungal isolates were less

commonly isolated than bacterial isolates (4.5%) encompassing C. albicans (45.1%), C. parapsilosis and other Candida species that were not speciated further (54.9%). An increased number of Klebsiela and Enterococci (E. faecium and E. faecalis) was observed in the second studied period. High rates of resistance to first– and second–line antibiotics were noted among gram–positive and gram–negative organisms. Multidrug resistant organisms included extended–spectrum beta–lactamase (ESBL) K. Pneumoniae, ESBL E. coli and A. Baumannii. Also, fluconazole–resistant Candida parapsilosis was detected despite the small number of fungal sepsis.

Conclusion: Gram–negative bacteria are important cause of neonatal sepsis in North Macedonia as in other LMICs and are associated with significant rates of resistance to WHO–recommended first– and second–line empirical antibiotics.

None declared