ID: 59

**TITLE:** DOES LUMBAR PUNCTURE PERFORMED FOR RAISED CRP HELP THE MANAGEMENT OF EARLY ONSET NEONATAL SEPSIS? A 20 - MONTH EXPERIENCE IN TRANSITIONAL CARE.

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**CONTENT:**

Early-onset neonatal sepsis (EOS) is a potentially life-threatening disease. C reactive protein (CRP) is the most used biomarker for the detection and management of EOS. In our neonatal unit lumbar puncture (LP) is routinely performed if CRP is above 20mg/L, as per East of England (EoE) guidelines, to detect meningitis and determine the length of treatment. EoE guidelines recommend 5 days of antibiotics for babies with significant rise in CRP. It is therefore unclear whether LP performed only on basis of raised CRP adds to the management of EOS.

We conducted a single-centre retrospective study to assess the impact of LP, performed on the basis of raised CRP only (in the absence of clinical signs), on detection of meningitis and management of EOS in terms of the length of antibiotic treatment.

49 newborn infants who did not require admission to the neonatal unit but who had been screened and treated for EOS on the basis of risk factors or soft clinical signs, and who had an LP for raised CRP were identified over a 20-month period from May 2016 until December 2017. Newborn infants with traumatic LPs were excluded due to controversy in interpreting microscopy in presence of red blood cells in cerebrospinal fluid. Patient records were reviewed along with CRP levels, CSF microscopy and culture results.

21 infants were treated in view of risk factors for sepsis but had no clinical signs of infection. The remaining 28 infants were treated for showing soft signs of infection eg mild respiratory distress or feeding difficulties. All infants remained well throughout their stay in the hospital.

No infant had raised white cells in their CSF and were negative for gram staining or bacterial growth. The mean length of antibiotic treatment for the babies having an LP was 5.3 days, versus the 5 days that would have been given as per recommendations in the guideline for raised CRP (p = 0.062).

In our study, LP in infants with raised CRP who were not significantly unwell did not result in a diagnosis of meningitis and did not alter the length of antibiotic treatment significantly. This study highlights the importance of reviewing the practice of LP being routinely performed as part of work up for EOS when CRP is raised without clinical signs or strong suspicion of meningitis.

**COI:** The authors declare that they have no conflict of interest
ID: 73

TITLE: A RETROSPECTIVE STUDY (2001-2017) OF BOTH ACUTE AND CHRONIC MORBIDITY AND MORTALITY ASSOCIATED WITH STAPHYLOCOCCUS AUREUS BACTERAEMIA IN A TERTIARY NEONATAL INTENSIVE CARE UNIT.

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CONTENT:

Staphylococcus aureus bacteraemia in NICU patients can cause significant morbidity and mortality. This study set out to evaluate the outcomes of early and late neonatal S. aureus bacteraemia with regard to risk factors, treatment, acute complications and long term outcomes.

A retrospective study of laboratory records, performed with local ethical approval of confirmed S. aureus bacteraemia occurring over a 16-year period (November 2001 to January 2017) in a large tertiary neonatal unit in Ireland with local ethical approval.

74 neonates (MSSA n=72, MRSA n=2) were identified for inclusion in the study of whom 8.1% (n=6) met the definition criteria for early sepsis and 91.89% (n=68) met definition criteria for late sepsis. Low birth weight neonates (born weighing less than 2500g) accounted for 79.72% (n=59) of all neonates. The median age to bacteraemia was 11 days post-delivery (range=0-100); median onset early sepsis 1.5 days versus late sepsis 12 days. Complications of SAB; cellulitis n=17, pneumonia n=12, necrotising enterocolitis n=7, thromobophlebitis n=5, skin abscess formation n=4, osteomyelitis n=3, endocarditis n=1. The mortality rate in infants with late S. aureus bacteraemia was 6.4% (n=3).

Preterm and low birth weight infants were at highest risk of S. aureus bacteraemia. Only a small proportion of affected children had long term clinical sequelae on follow-up. While early empiric antibiotic treatment was universally implemented, the high rate of recurrence and breakthrough bacteraemia suggests that early implementation of a rationalized antimicrobial regimen may be of particular benefit in this cohort.

COI: None Declared
ID: 140

TITLE: C-REACTIVE PROTEIN FOR THE DIAGNOSIS OF LATE-ONSET INFECTION IN NEWBORN INFANTS: SYSTEMATIC REVIEW OF DIAGNOSTIC TEST ACCURACY

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Nick Meader 1
Jemma Cleminson 1
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CONTENT:

Late-onset infection is the most common serious complication associated with hospital care for newborn infants. Confirming the diagnosis by microbiological culture typically takes 24 to 48 hours. The serum level of the inflammatory marker C-reactive protein (CRP) measured as part of the initial investigation is used as an adjunctive rapid test to guide management in infants with suspected late-onset infection. Fast and accurate diagnosis of late-onset infection in newborns could inform treatment decisions and avoid unnecessary administration of antibiotics. We compared the accuracy of serum CRP with microbiological culture for diagnosing late-onset infection in newborns.

We searched MEDLINE (1946-2019), Embase (1946-2019), and Science Citation Index (1900-2019) for references published in any language. We included cohort and cross-sectional studies comparing the accuracy of serum CRP level with microbiological culture to diagnose late-onset (> 72 hours after birth) infection in newborn infants. Two reviewers assessed study eligibility against pre-defined criteria and extracted data on methodological quality and diagnostic performance, contacting authors for unpublished data where necessary. We generated hierarchical summary receiver operating characteristic curves to estimate sensitivity and specificity and applied diagnostic test accuracy measures to a hypothetical cohort of 1000 babies. The protocol was registered in PROSPERO (CRD42016045585).

We included 22 studies with data for 2255 infants. Most were prospective cohort studies conducted in neonatal units in high- or middle-income countries since the 1990s. Most studies used a pre-specified CRP cut-off for a positive index test (typically 5-10 mg/L) and the culture of a pathogenic micro-organism from blood as the reference standard. Risk of bias was low with independent assessment of index and reference tests in all studies. At median specificity (0.74), pooled sensitivity was 0.62 (95% confidence interval 0.50 to 0.73, Figure). Adding serum CRP level to the assessment of an infant with a 40% pre-test probability of late-onset infection (the median for included studies) generates a post-test probability of 26% for a negative test and a post-test probability of 61% for a positive test. Out of 1000 babies, 152 cases of infection would be missed, 256 would be wrongly diagnosed.

Serum CRP level at initial evaluation of an infant with suspected late-onset infection is unlikely to be considered sufficiently accurate to aid early diagnosis or select infants to undergo further investigation or treatment with antimicrobial therapy or other interventions. Future research efforts might focus on other serum biomarkers, such as procalcitonin, that are elevated more quickly in response to infection or inflammation.

IMAGES:
https://www.eiseverywhere.com/eselectv3/v3/events/351149/submission/files/download?fileID=272d8f58fbbaf918d9c75dca7b589c00-MjAxOS0wNSM1Y2UyNjY2YmRjNzA4

Summary receiver operating characteristic (SROC) plot of C-reactive protein for neonatal infection. Study estimates of sensitivity and specificity are shown with the SROC curve.
COI: None declared.
ID: 307

TITLE: PATIENT AND PRESCRIBER FACTORS AND THE PROLANGATION OF ANTIBIOTICS AFTER BIRTH IN INFANTS LESS THAN 29 WEEKS.

AUTHORS: Mohamad Rami Alturk
John Baier

AFFILIATIONS: Department of Pediatrics and Child Health, University of Manitoba, Winnipeg, Canada

CONTENT:

Objective: The objective of this study is to delineate whether patient-related or prescriber-related factors account for the prolongation of antibiotic therapy beyond 48 h in premature infants whose initial blood cultures are negative.

Retrospective review of infants born <29 weeks born between January 2011 and December 2012. Infants who had positive blood cultures or who died in the first 48 h were excluded from analysis. Antibiotic courses were categorized as prolonged if antibiotics were continued for greater than 48 h and not prolonged if antibiotics were stopped by 48 h. Neonatologists were classified as high prescribers if they prolonged antibiotics for more than the median rate for the overall group.

Seventeen of 59 (29%) infants had empiric antibiotics continued for greater than 48 h despite negative blood cultures. Both patient-related factors and the neonatologist at 48 h of life were significantly associated with prolongation of antibiotics. Patient-related factors associated with prolongation of empiric antibiotics were positive maternal Group B streptococcus (GBS) status (5/17 versus 4/42; p=0.054), white blood count >25,000 (7/17 versus 1/42; p<.001), rupture of membranes (ROM) duration (187 ± 253 h versus 47 ± 89 h; p=0.015). Increased number of risk factors was associated with increase likelihood of prolongation. Risk factors for sepsis were similar between high and low prescribing neonatologists with high prescribers prolonging antibiotics with a lower number of risk factors.

The decision to prolong empiric antibiotics in culture negative preterm infants is related both to patient and prescriber-related factors.

IMAGES: https://www.eiseverywhere.com/eeselectv3/v3/events/351149/submission/files/download?fileID=9571a5f00650d322b6e8f61353032ce-MjAxOS0wNSM1Y2UyNjY2YzJ2ZGUx

COI: None declared
ID: 371
TITLE: THE PREDICTION OF ASTHMA IN CHILDHOOD FOR PRETERM BABIES - A CYTOKINE STUDY IN SALIVA
AUTHORS: Ying-Lun Hsu, Ting-Yu Su, I-Lun Chen, Hsin-Chun Huang
AFFILIATIONS: Department of Pediatrics, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan.

CONTENT:

Asthma is a chronic airway inflammatory disease and affects approximately 5% of the population in Taiwan. In addition, preterm infants have higher risk of developing asthma than full-term infants. Previous studies revealed that some cytokines were associated with asthma or atopic disease and those cytokines were mainly detected from serum or sputum, which were difficult to be obtained in infants. To date, few researches on the salivary cytokines of prematurity were reported. Thus, the goal of our study was to find the relationship between asthma and salivary cytokines, which is noninvasive, in the early life of prematurity.

We collected preterm babies from August 2012 to May 2017 and excluded those who had bacterial infection within seven days of life, maternal sepsis and maternal clinical chorioamnionitis. Their gestational age, birth weight, Apgar score, comorbidity, intubation time, infectious times were documented. The salivary cytokines on the first (D1) and seventh (D7) day of life were detected by MILLIPLEX. We followed-up these patients at OPD or by phone interviewing and also recorded the status of re-admission. We defined asthma as using inhaled selective beta-2 agonists and/or inhaled corticosteroid treatments more than twice in one year, or taking oral leukotriene modifiers for more than one month. Kaplan-Meier or Cox-regression were used for analyzing data between the asthma and non-asthma groups.

A total of 125 preterm infants were enrolled in this study. Eighteen children were diagnosed with asthma. They had younger gestational age, lower Apgar score at the first minute, longer duration of intubation during the first admission and more hospitalizations due to respiratory tract infection than those in non-asthma group (p= 0.036, 0.049, 0.021, <0.001 respectively). The numbers of hospitalization due to respiratory syncytial virus infection was also higher in asthma group than that in non-asthma group (p= 0.002). The incidences of bronchopulmonary dysplasia, retinopathy of prematurity, and patent ductus arteriosus were not different between the two groups. In salivary cytokines, the levels of D1, D7 interleukin (IL)-10 and D1 tumor necrosis factor (TNF)-α were significantly higher in asthma group compared with non-asthma group (p= 0.036, 0.019, 0.012 respectively).

Early-life salivary cytokines as IL-10 and TNF-a of prematurity were associated with the risk of developing asthma in childhood. To know salivary cytokines may help us early intervene on high risk infants to prevent the occurrence of asthma in premature infants.

COI: None declared
ID: 388  
TITLE: NEONATAL ENCEPHALOPATHY: ALTERED HYPOXIA-INDUCIBLE FACTOR (HIF1) AND HYPOXIC RESPONSIVE CYTOKINES FROM NEONATES TO EARLY CHILDHOOD.  
AUTHORS: Kelly L1,2,5, Zareen Z1, O’Dea M1,2,5,7, T. Strickland, 1-2 D. Sweetman3, D. McDonald5, E.J. Molloy1-7  
AFFILIATIONS: 1Discipline of Paediatrics, Trinity College Dublin; 2Trinity Translational Medicine Institute, St James Hospital; 3Neonatology, National Maternity Hospital; 4UCD School of Medicine and Medical Sciences, University College Dublin; 5Tallaght University Hospital; 6Neonatology, Our Lady’s Children’s Hospital, Crumlin; 7Coombe Women’s and Infant’s University Hospital, Dublin, Ireland.  

CONTENT:  
Neonatal Encephalopathy (NE) is associated with hypoxia-ischaemia and induction of inflammation. Persistent inflammation is associated with brain injury in this cohort. HIF-1α (hypoxia-inducible factor-1 alpha) mediates the responses of mammalian cells to hypoxia/ischemia by inducing the expression of adaptive gene products (e.g., vascular endothelial growth factor (VEGF) and erythropoietin (EPO). The aim of this study was to evaluate associations between VEGF and EPO and HIF 1α in NE at birth and early childhood.  

Patients were recruited from The Coombe Women and Infants University Hospital, Dublin, The National Maternity Hospital, Dublin and Our Lady’s Children’s Hospital, Crumlin. Ethical approval was granted and parental consent was obtained. We included infants with NE who had therapeutic hypothermia as well as a cohort of children post-NE at school-age and a group of children with non-NE cerebral palsy. All groups were compared to age-matched controls. Samples were treated with lipopolysaccharide (LPS) (1ng/ml) and compared with vehicle controls. Whole blood RNA was isolated, cDNA was synthesized and analysed by quantitative PCR for expression of HIF1 α and multiplex cytokine analysis for VEGF and EPO. Statistical analysis was performed using ANOVA and t-test with Graphpad Prism Version 7.0.  

HIF-1α was increased in children with non-NE CP (p<0.04) versus controls and there were non-significant increases in neonatal NE and childhood NE versus controls. Higher EPO was seen in neonates with NE compared to age-matched controls as well as decreased VEGF. At school-age, children post NE were significantly LPS hyporesponsive (p<0.05) compared to controls with similar VEGF and EPO responses. Alterations in the HIF 1α pathway are found in children with NE at birth and later in childhood. Persistent changes in systemic inflammation are found in childhood in children who had NE and also those with non-NE CP. This could present a possible future therapy with propyl hydroxylases as in other disorders related to the HIF pathway.  

COI: None declared
ID: 556  
**TITLE:** USING A SEPSIS CALCULATOR TO REDUCE ANTIBIOTIC USAGE IN EARLY ONSET SEPSIS - A QUALITY IMPROVEMENT PROJECT  
**AUTHORS:** Kwok Sean Mun 1; Binod Rana 1; Ahmed Kamal 1; Lucksini Selvadurai 1  
**AFFILIATIONS:** 1 Neonatal Intensive Care Service, William Harvey Hospital, East Kent Hospitals University NHS Foundation Trust, UK  

**CONTENT:**

Early onset sepsis (EOS) defined as a neonatal infection within 72 hours of birth. Its incidence in the UK is 0.7/1000 live births. NICE UK has published a national guideline to provide recommendations for the management and investigations of infants at risk of EOS. Unfortunately, it has been reported that the guidance has led to greater clinical investigations, lumbar punctures, longer treatment and stay.

Kuzniewicz et al 2016, developed the Kaiser online sepsis calculator based on risk factors and clinical examination which has shown the ability to reduce unnecessary treatment of EOS. The aim of this study was to apply it locally to evaluate its efficacy, thus improving family centred care.

The study cohort included 92 infants who were born over 2 time periods, 1st July - 31st September 2017 and 1st March - 31st May 2018 who were treated for EOS in the postnatal ward. Infants born at <34 weeks gestation and infants requiring significant resuscitation from the labour ward were excluded as they were admitted to the neonatal intensive care unit for ongoing intensive care requiring a higher level of monitoring. Infants in the study cohort while treated and managed as per the NICE national guideline (UK)and the Kaiser sepsis tool was simultaneously applied. Basic demographics, NICE risk factors, clinical examination findings and outcome from the Kaiser sepsis tool were entered into an excel spreadsheet for subsequent evaluation. Data collection is ongoing presently.

The study cohort included 92 infants born at 34 weeks gestation or later: mean [SD] age, 38.3 [2.3] weeks; median age, 39 weeks, male 51, female 41 . 92 infants received antibiotics as per NICE guideline and all blood cultures were negative. 11 infants had lumbar punctures performed and all 11 CSF cultures were negative. Average length of stay was 2.6 days. According to the Kaiser online sepsis tool, 61 infants could receive normal newborn care, 8 infants required 24 hours observation on the post natal ward, 14 infants required blood cultures taken while 9 infants required blood cultures taken and antibiotics commenced. Therefore using Kaiser online sepsis tool has reduced any intervention and length of stay by 66%. The incidence of culture-confirmed EOS was not statistically different across periods. Further analysis pending ongoing larger data collection.

The Kaiser online sepsis tool would suggest that there is a 66% reduction of all infants screened for EOS, without compromising safety, under the NICE EOS guideline. However given the low incidence of EOS, 0.7/1000 live births, there needs to be careful evaluation of greater numbers as well as ongoing surveillance once the Kaiser online sepsis tool is implemented. Data collection is ongoing and future analysis will contribute to the conclusion.

**COI:** None declared
ID: 595  
TITLE: BRAIN-DERIVED NEUROTROPHIC FACTOR (BDNF) SERUM LEVELS IN FULL-TERM NEONATES WITH SEPSIS: PRELIMINARY RESULTS  
AUTHORS: Vasiliki Bourika 1; Kalliopi Michalakakou 2; Eugenia Hantzi 2; Ioannis Papassotiriou 2; Tania Siahanidou 1  
AFFILIATIONS: 1 Neonatal Unit, First Department of Pediatrics, National and Kapodistrian University of Athens, Medical School, Athens, Greece 2 Department of Clinical Biochemistry, “Aghia Sophia” Children’s Hospital, Athens, Greece  

CONTENT:  
Neonatal infections may cause severe long-term consequences and have a negative impact on neurodevelopmental outcome. Brain-Derived Neurotrophic Factor (BDNF) acts as a growth factor, supports the survival and differentiation of neurons and promotes synaptogenesis. Circulating BDNF levels are highly correlated with BDNF concentrations in the central nervous system, whereas serum BDNF levels in neonates consist an early marker of aberrant neurodevelopment. As far as we know, circulating BDNF levels have not been determined in neonatal sepsis. The aim of this study was to evaluate serum BDNF levels in septic neonates and to examine associations with CRP, SAA and cytokines serum levels.  
The study population consisted of 21 full-term neonates with clinical signs and symptoms of sepsis and 32 neonates, of similar postnatal age and gender distribution to those of septic infants, as controls. All neonates with sepsis underwent blood, CSF and suprapubic urine sampling on admission for analysis and culture; Cultures were positive in 11/21 septic neonates. Besides, blood samples were drawn in all patients during the first 24 hours (acute phase) and at 7th-10th day of hospitalization (recovery), and once in controls, for routine blood tests (FBC, renal and liver function, serum CRP levels), as well as to determine SAA levels by immunonephelometry, serum cytokines (IL-1b, IL-6, TNF-a) using Luminex technology and BDNF levels in serum by ELISA.  
Median (25th-75th) percentiles of serum BDNF levels did not differ significantly between patients and controls at the acute phase of infection [10200 (6520-17120) and 15100 (8245-16360) pg/ml respectively, p=0.378] or at recovery [12960 (6740-16360) and 15100 (8245-18430) pg/ml respectively, p=0.284]. In patients, BDNF levels at the acute phase of infection did not differ significantly than levels at recovery (p=0.811). Moreover, BDNF levels did not differ significantly between patients with positive blood/urine and/or CSF cultures [9800 (6520-15240) pg/ml] and those with negative cultures [11930 (7435-18665) pg/ml] (p=0.705). No correlation was found between BDNF and CRP, SAA, IL-1b, IL-6, or TNF-a levels.  
According to these preliminary results, no alterations were recorded in serum BDNF levels in septic full-term neonates. Whether circulating BDNF levels may be impacted by neonatal sepsis in preterm infants remains to be evaluated.  

COI: None Declared
ID: 770

TITLE: THE ANTISECRETORY FACTOR IN BREASTMILK AFTER TERM AND PRETERM BIRTH

AUTHORS: Anna Gustafsson 1,2; Ewa Henckel 1,2; Ewa Johansson 3,4; Merna Oshalim 3,4; Anna-Karin Bernhardsson 1,5; Axel Olin 5; Petter Brodin 1,5; Stefan Lange 3,4; Kajsa Bohlin 1,2

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4 Region Västra Götaland, Sahlgrenska University Hospital, Department of Clinical Microbiology, Gothenburg, Sweden
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CONTENT:

Antisecretory factor (AF) is an endogenous protein involved in the innate regulation of secretory and inflammatory processes. Inflammation contributes to preterm labour and various complications of prematurity. We have previously described lower levels of AF associated with increased markers of inflammation in preterm placental tissue compared to term. The objective in this ongoing study is to further describe the involvement of AF in the perinatal period, here in breastmilk after term and preterm birth.

Mothers of preterm (<30 weeks gestation) and term control infants born at Karolinska University Hospital, Sweden had breastmilk collected < 1 week (colostrum), at 4 week (mothers of preterm only) and at 12 weeks (mature milk) postpartum. The level of active AF was determined using sandwich ELISA.

The level of AF in breastmilk was higher in colostrum (n=62) compared to mature milk (n= 51) (p<0.001). In milk from mothers of preterm infants AF levels was higher at week 1 than week 4 (1.33 vs 0.44 p<0.001) and week 12 (1.33 vs 0.62 p<0.001). Breastmilk from mothers of term (n=22) and preterm (n=40) infants had similar AF-levels in colostrum (p=0.80). In mature breastmilk (n=51), the level of AF was higher (p=0.01) in mothers of preterm (n=25) infants than in mothers of term (n=26) infants. There was a wider variability in the level of AF in mature milk from mothers of preterm infants.

Following birth, levels of active AF appear to be higher in colostrum than in mature milk, in line with many other immunological factors in human milk. High levels of active AF in colostrum may have a role in protection against inflammatory processes after birth. A higher level of AF in mature milk of preterm mothers may suggest a compensatory role in protection for inflammatory complications in the preterm infant.

COI: None declared
ID: 811

**TITLE:** REVIEW OF TIGHT JUNCTION PROTEINS AS POTENTIAL BIOMARKERS FOR NECROTIZING ENTEROCOLITIS (NEC)

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**AFFILIATIONS:** 1 Graduate Entry Medical School, University of Limerick, Limerick, Ireland
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**CONTENT:**

Necrotizing enterocolitis (NEC) is a severe inflammatory bowel disease afflicting extreme micro preterms (<1500 grams), at an incidence of 7-10% along with high rate of mortality (1). A clear understanding of the pathophysiology of NEC is lacking. Tight junctions (TJ) are cell-cell adhesion complexes found on the apical portion of intestinal epithelial cells and are reflective of the functionality of the gut epithelial barrier are being increasingly recognized as a potential biomarker for the detection of NEC. This paper reviewed current literature focused on the role of tight junction proteins, specifically claudin proteins, and their use as potential novel non-invasive biomarker for NEC.

Articles were searched using the following databases: Pubmed, Embase, Medline, Web of Science, ScienceDirect. Guidelines were looked upon on PRISMA, MOOSE, Cochrane Handbook of Systematic Reviews of Interventions. All studies in the review were selected using these databases; none were hand-selected. Studies relating to Tight Junction and NEC were selected.

Inclusion criteria: Studies performed on above terminologies along with overlapping of terminologies.

Exclusion criteria: Studies performed prior to 2000 and studies that focussed on the development of research methods.

Most recent work done on tight junction proteins in relation to NEC has been done on animals models. Therefore, it was decided to concentrate on these studies.

Disruption of TJ is understood to be a core feature of NEC pathogenesis. This review supports that intestinal barrier disruption appears to involve various isoforms of structural proteins including claudins. Claudin isoforms may be a promising area for future clinical application based on extensive studies in animal NEC models and promising outcomes from small studies in human microprems. Recent literature reveals that changes seen in levels of claudin isoform expression has been shown to correlate with structural biology, intestinal integrity, and the unique environmental conditions that are appreciated factors in the development of NEC. Changes seen in claudin isoforms have been shown to correlate with conditions reflecting environmental factors including hypoxia, enteral feeds and nutrient supplementation, and interactions between probiotics & commensal bacteria within the gut lumen.

The gut barrier including TJ and their constituent proteins have a significant role in the maintenance of the gut epithelial barrier, and may be an area of interest for research towards understanding the pathophysiology of NEC. Future directions:

- Relationship between disrupted TJ and how this directly relates with the inflammation and severity of NEC.
- Alterations of claudin protein expression in tight junctions may be a useful biomarker.

**IMAGES:**
https://www.eiseverywhere.com/eselectv3/v3/events/351149/submission/files/download?fileID=d141c2c5dd1a6fa931c249cc1ef8dba-MjAxOS0wNSM1Y2UyNyY2Y2VmMDkz

**COI:** None declared
ID: 983

TITLE: DYNAMICS OF CYTOKINE ELABORATION IN THE FIRST THREE DAYS OF LIFE FOR NEWBORNS WITH PREMATURE RUPTURE OF MEMBRANES. NEONATAL CORRELATION

AUTHORS: Gabriela Zaharie 1, Tudor Dragan 2, Carmen Crivii 3, Alexandru Zaharie 4, Monica Hasmasanu 1, Melinda Matyas 1

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4. AKH, Wien, Austria

CONTENT:

Newborns present distinct patterns of cytokine elaboration in different disease states.
ENA-78(epithelial neutrophil activating peptide) is the cytokine most strongly correlated with PMN concentrations in the lung fluids of patients with ARDS.
Tumour Necrosis Factor (TNF), is an inflammatory cytokine produced by macrophages/monocytes during acute inflammation.
IL-10(interleukin-10) is an anti-inflammatory cytokine, with regulatory role in neutrophil influx in the lung during inflammation.
The aim of the study is to evaluate the blood levels of cytokines, in the first three days of life and try to correlate it with neonatal complication.

It is a prospective study on 36 newborn that have had premature rupture of the membranes, in the III-rd level unit, Neonatology I, Cluj Napoca, Romania. We quantified paraclinical parameters in dynamics: the pH, means of oxygen saturation, means of FiO2, WBC and plaquettes in the first and third days of life.

We try to find correlation between the blood levels of TNF, ENA-78 and IL-10 with neonatal pathology developed by the newborn.

Blood levels of cytokines were measured with a specific ELISA according to the manufacturer’s instructions.
The control group are healthy newborns on which the authors determined only by the first day of blood levels of cytokines. All patients have informed consent signed.
Statistical analysis was done with SPSS.

Antropometric data is presented in the Tables1 with no differencies for both groups.
Duration of premature rupture of the membrane was 78.40±139.90 hours for the study group.

Paracliniical parameters in dynamics is presented in Tables 2.Ph, oxygen saturation, WBC and plaquettes for the two groups are presented in the Tables 2. WBC and Plaquetts had a significant decreased value in the third day of life. Ph and saturation were improved significantly.

ENA 78 and IL 10 were significant reduced in the 3-rd day in the group with PROM (Tables3).
We evaluated the dynamics of cytokines in the survival compare to deces group. In survival group the decrease of ENA78 and IL 10 was significant. The blood level of ENA78 was signifficant higher in the first day in survival group(Tables 4).
The highest value of ENA78 was founded in the cerebral hemorrhage and NEC group (Tables 5).

1. Blood cytokines levels are elevated in the newborn with premature rupture of membranes.
2. ENA78 had the highest value in in the fist day of life in the survival group and also in the study group.
3. In survival group the decrease of ENA78 and IL 10 was significant.
4. We find no correlation between the blood levels of cytokines and specific pathology.
5. The highest values of ENA78 were founded in the cerebral hemorrhage and NEC group.
IMAGES:
https://www.eiseverywhere.com/eselectv3/v3/events/351149/submission/files/download?fileID=c7c01d67a21a2205a50bf7a80ccbe078-MjAxOS0wNSM1Y2UyNjY2ZDQwYzg1

COI: None Declared