ID: 222  
TITLE: MULTIPLEXED POINT-OF-CARE TESTING AND SCREENING TO DETERMINE THE FREQUENCY OF RESPIRATORY VIRAL INFECTIONS IN A NEONATAL INTENSIVE CARE UNIT  
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CONTENT:  
Respiratory viruses have been described to cause severe respiratory and sepsis-like symptoms in infants hospitalized in the neonatal intensive care unit (NICU). But despite a growing body of literature, the magnitude of the problem is not sufficiently known. In particular, the frequency of asymptomatic or minimally symptomatic infections is an open question. Aim of this study was to evaluate the overall frequency of respiratory viral infections in our NICU.

This was a prospective, observational study from 01.02.2018 to 31.01.2019. Infants hospitalized ≥72 hours were eligible for the study. To determine the frequency of respiratory viral infections, multiplexed point-of-care testing (POCT) of symptomatic infants was combined with a weekly screening of all infants. Virus samples were collected via nasal swabs and analyzed with the BIOFIRE® Respiratory Panel (POCT) and an in-house multiplex PCR (weekly screening / POCT crosscheck). Our 10-bed NICU is 24/7 open to families and visitors. The number of simultaneous visitors is restricted to two per patient. Parents and visitors are instructed in hand hygiene and advised to avoid visits in cases of respiratory illness. Siblings (irrespective of age) may visit the NICU following a physical check-up.

70 of 366 infants admitted to the NICU were eligible for the study. 67/70 infants (96%) were finally enrolled and analyzed. Multiplexed point-of-care testing (75 symptomatic episodes) combined with the weekly screening (272 episodes) yielded in 17 positive samples from 2 infants. Rhino-/enterovirus were detected in all cases. Both infants were first detected during symptomatic episodes. Thus, no infant was first diagnosed by means of the screening.

Respiratory viruses were detected during symptomatic and asymptomatic episodes but affected < 1% of infants admitted to our NICU and < 3% of infants enrolled in the study. A low frequency of respiratory viral infections may be attained despite adherence to family integrated care including liberal visiting policies for younger siblings.

COI: None declared
ID: 249

TITLE:

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CONTENT:

Signs of late-onset septicemia (LOS) and necrotizing enterocolitis (NEC) overlap with normal preterm physiology, and about 10-20 sepsis evaluations are performed and antibiotics given for each case of proven LOS or NEC. Early diagnosis and treatment are important for improving outcomes, but unnecessary antibiotics increase multiple morbidities. Our group has previously developed continuous vital sign analytic tools to alert clinicians to potential impending sepsis and we are developing other decision support systems to assist in decisions about starting and stopping antibiotics. The aim of the current retrospective review and analysis was to use clinical variables and signs at the time of LOS/NEC evaluation to develop a model for prediction of ultimate diagnosis of LOS or NEC ruled in versus sepsis ruled out (SRO). Medical records of consecutive very low birth weight (VLBW) infants admitted to 3 NICUs were reviewed, excluding those who died within 3 days of birth or were admitted after 28 days of age. For each infant with at least 1 blood culture sent for suspected LOS/NEC, one workup was reviewed, either the first positive workup or, if none were positive, the first negative workup. Clinical, laboratory and imaging findings prompting the workup were collected. The workup was classified as LOS/NEC if there was a positive blood culture or radiographic diagnosis of NEC and the infant was treated with at least 5 days of antibiotics and as sepsis ruled out (SRO) if cultures and XRay were negative and less than 5 days of antibiotics given. Cases of focal infection and clinical sepsis were not used in modeling.

A baseline risk model included demographic, perinatal, and clinical variables associated with LOS/NEC versus SRO in univariate analysis. A clinical model (with signs, labs, and imaging at the time of workup) was then tested in univariate analysis, followed by a combined baseline and clinical model. Multivariable logistic regression was used to calculate area under the receiver operator characteristic curve (AUC) with confidence intervals determined using bootstrap methods. Models were compared using net reclassification improvement (NRI).

Of 633 VLBW infants meeting inclusion criteria, 451 (71%) had at least one blood culture evaluation reviewed. Of these, 161 were eventually classified as LOS/NEC and 177 SRO (113 were focal infection or clinical sepsis and not included in modeling). Figure 1 is a tornado plot showing the proportion of evaluations with each clinical variable based on the final outcome of LOS/NEC or SRO for each clinical sign. Results of logistic regression models using baseline variables alone, clinical signs alone and the two models combined yielded AUCs [95% CIs] with increasing predictive performance: baseline model AUC = 0.700 [0.641 - 0.760], clinical signs model AUC = 0.736 [0.681 - 0.792] and combined model AUC = 0.790 [0.739 - 0.841]. The continuous NRI of the combined model was 0.657 [0.442 – 0.872] (p<0.0001), which translates to a 66% improvement in prediction over the baseline model.

In a multicenter cohort of VLBW infants, a combined baseline risk and clinical signs model performed better than either model alone to predict the ultimate diagnosis of LOS/NEC versus SRO. Future work will combine continuous analysis of vital sign patterns with a clinical risk score to assist in earlier institution of antibiotics for infants with true infection and withholding or earlier discontinuation of antibiotics in lower risk situations.
Figure 1. Tornado plot of clinical signs prompting blood culture evaluations. The size of the horizontal bars represents the proportion of evaluations with each clinical sign based on ultimate designation of LOS or NEC (red bars, left) and sepsis ruled out (blue bars, right). Asterisks indicate significant difference in LOS/NEC vs. SRO by Fisher’s exact test (*p<0.05). ABDs = apnea, bradycardia, desaturation spells; CBC = complete blood count; CRP = C-reactive protein.

COI: None declared
ID: 362

TITLE: TIMELINESS OF VACCINATIONS IN PRETERM INFANTS IN THE NETHERLANDS

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CONTENT:

In the Netherlands, preterm infants receive the immunisations at the same chronological age as recommended for term infants without correction for gestational age (GA). The aim of this paper was to describe the timeliness of the routine Dutch national immunisation schedule in preterm infants in their first year of life and to evaluate possible determinants of delay.

This study is part of a prospective cohort study evaluating the immunogenicity against the vaccines of the national immunisation programme in preterm infants. Preterm infants were recruited between October 2015 and October 2017 and stratified according to GA (<28, 28-32 and 32-36 weeks). Data from the baseline parental questionnaire, monthly parental questionnaires and medical records were used to determine the immunisation age and proportion of infants timely receiving the first immunisations (between 42 and 63 days). Results were compared between the GA and birth weight (BW) groups. Determinants associated with timeliness of immunisation were studied by multivariate logistic regression analysis.

Delayed start of immunisation occurs in 39.5% of preterm infants in the Netherlands. The proportion of infants receiving the first immunisation not on time was highest for the group with GA <28 weeks (63%). The mean age of the first immunisation across all GA groups was 62.7 days (range 33-118) and differed significantly between GA group < 28 weeks and the other two GA groups of 28-32 and 32-36 weeks (p < 0.001). Similar results were seen when stratified by BW. Multivariate analysis showed that low SES and prolonged hospitalisation beyond 37 weeks GA each negatively influenced timeliness of the first immunisation.

These findings indicate that start of immunisations was often delayed in preterm infants and differs for different GA groups, being highest (63%) in infants < 28 weeks GA. Lower SES and prolonged hospital stay beyond 37 weeks GA are important determinants of timeliness. Efforts to improve timeliness should focus most on counselling parents in lower SES.

COI: None declared

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ID: 608
TITLE: IMPLEMENTATION OF THE KAISER PERMANENTE SEPSIS RISK CALCULATOR (KP-SRC) IN A TERTIARY NICU IN THE UK: A PILOT STUDY
AUTHORS: Sunitha Vimala
eravan 1
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CONTENT:

Current UK guidelines on the management of early-onset sepsis (EOS) lead to significant investigations and overtreatment of well neonates at risk of sepsis. This has the potential for antibiotic resistance, mother-baby separation and substantial healthcare costs. The KP-SRC provides a Bayesian predictive model that estimates individual sepsis risk based on maternal risk factors and neonatal clinical examination, without reliance on inflammatory markers. Data on clinical application of this calculator within a UK context is limited. We evaluated the use of KP-SRC and established the safety of this risk calculator in our centre.

The primary aim of our single-centre cohort study was to determine the difference in the number of infants ≥34 weeks’ gestation commenced on antibiotics for suspected EOS, using NICE guidelines compared to KP-SRC. Secondary aim was to ensure KP-SRC accurately identified infants who were subsequently treated with a prolonged course of antibiotics for clinical concerns of sepsis.

In Phase 1 (Sep 2018-Dec 2018), we retrospectively collected data on infants with maternal suspected sepsis as a sole risk factor. In Phase 2 (Mar 2019-Apr 2019), inclusion criteria extended to include all infants with suspected EOS and we collected data prospectively. KP-SRC scores were calculated and compared with actual antibiotic use and inflammatory markers. Scores were kept blinded to avoid clinical bias.

There were 1314 eligible infants in Phase 1 and 795 infants in Phase 2. Of these, 70 (53/1000 live births) and 82 (103/1000 live births) respectively, were treated with antibiotics according to NICE guidelines. None of the 152 babies had positive blood cultures.

Based on KP-SRC, only 9 babies (0.7%) in Phase 1 would have required empiric antibiotics (relative reduction 87.5%). KP-SRC appropriately categorised the one baby who had >7 days antibiotics into the group requiring empiric antibiotics (Fig 1). In Phase 2, only 7 babies (0.9%) would have required empiric antibiotics (relative reduction 91.4%). KP-SRC appropriately categorised the one baby who had >7 days antibiotics into the group requiring blood cultures and regular observations (Fig 1).

As Table 1 denotes, high KP-SRC scores correlated well with clinically unwell babies, but poorly correlated with C-reactive protein values.

This study demonstrated the potential to safely and significantly reduce the number of infants receiving antibiotics for suspected EOS, using KP-SRC as a clinically-based decision support tool. These results are consistent with similar published studies worldwide. Our study has initiated a larger, prospective multicentre study across 17 neonatal units within our region, to further validate the applicability of this calculator.
Table 1 showing good correlation between KP-SRC recommendations with clinical examination*, but poor correlation with high CRP values**

Figure 1 showing KP-SRC recommendations accurately identified neonates who subsequently required prolonged course of antibiotics >7 days

**COI:** None declared
ID: 644

TITLE: THE ASSOCIATION OF EARLY ANTIBIOTIC TREATMENT ON THE INCIDENCE OF LATE ONSET INFECTION

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CONTENT:

The majority of very low birth weight infants are treated with empirical antibiotics, usually ampicillin and gentamicin, immediately after birth based on risk factors and non specific clinical signs. This policy, however, leads to gut dysbiosis and immune system dysregulation, possibly resulting in increased morbidity and mortality. Antibiotic stewardship programs are commonly used in NICU’s in order to ascertain appropriate antibiotic use and reduce the duration of treatment. The objective of this study was to identify the association between antibiotic exposure during the first days of life and the incidence of late onset sepsis.

This is a retrospective study including 63 neonates with birth weight (BW) <1500 gr, hospitalized in the G.M.H. “Elena Venizelou” NICU between July 2017 and December 2018. The mean gestational age was 29.01 weeks and the mean BW was 1091.5 gr. The study group included 58 neonates (92%) who received early antibiotic treatment and 5 neonates (8%) who received no antibiotics at all in the first 72 hours of life. The antibiotic administration was empiric and there was no culture confirmed infection. The treated cases were retrospectively analyzed to check the appropriateness of therapy in regards to the indications and the duration of treatment according to latest guidelines that recommend strict antibiotic use and prompt cessation of therapy when infection is ruled out.

Survival rate of the studied infants was 96.8%. Nearly half of the neonates (49.2%) presented with at least one episode of late onset infection. The vast majority were exposed to early empiric antibiotic treatment - 93.5% versus 6.5% of neonates who received no antibiotics. Neonates who were exposed to antibiotics were 15.9 times more prone to late onset infection (OR 15.9; p<0.01). Moreover, antibiotic treated infants had 13.2 times greater possibility to have more than one episode of late onset infection (OR 13.2; p<0.001). Antibiotic administration was in accordance to new stewardship guidelines in 26 out of 63 neonates (41.3%). Statistical analysis revealed that the implementation of these recent recommendations did not have a significant effect on the infection incidence rate (p=0.613) nor the number of infection episodes (p=0.757).

Antibiotic administration was a statistically significant risk factor for the onset of at least one episode of late onset sepsis. No notable effect was observed after controlling for the appropriateness and duration of therapy according to new stewardship policy. This may indicate the need for revised antibiotic initiation guidelines in NICU’s since the negative impact of early antibiotic use is evident.

COI: None declared
ID: 645

**TITLE:** LATE-ONSET SEPSIS RATES BEFORE AND AFTER INTRODUCING ROUTINE PROPHYLACTIC LACTOBACILLUS AND BIFIDOBACTERIA PROBIOTICS: 10-YEAR REVIEW

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**CONTENT:**

Meta-analyses show that giving routine probiotics reduces necrotising enterocolitis (NEC) in preterm infants. The impact of probiotics on late-onset sepsis (LOS) is less clear. Our aim was to compare rates of LOS in 5-year epochs before and after implementation of routine daily multi-strain probiotics administration to high-risk neonates.

Single centre retrospective observational study over a 10-year period. On 1/1/13 our NICU introduced daily prophylactic multi-strain probiotics (Lactobacillus and Bifidobacterium) to prevent NEC in high-risk preterm neonates. Babies eligible for probiotics in the 5-year epoch 1/1/13 to 31/12/17 were those <32 weeks’ gestation, and/or preterm and 72 h after birth. Repeat growth within 7 days was considered the same episode.

Cohorts in pre- (n=469) and routine (N=513) probiotics epochs shared similar baseline characteristics. Rates of sepsis and the responsible organisms are also presented in the Table. Significantly fewer babies had one or more episodes of LOS in the routine probiotics epoch compared with the earlier epoch, 59/513 (11.5%) versus 106/469 (22.6%), p<0.0001, Chi-square test. Significantly fewer episodes of coagulase-negative staphylococcal infections occurred in the routine-probiotics epoch (47/513 (9.2%) versus 87/469 (18.6%), p<0.0001, Chi-square test. No case of a probiotic-organism bacterial sepsis was observed in either epoch.

Routine use of multi-species Lactobacillus and Bifidobacterium combination probiotics appears safe. Administration of Lactobacillus and Bifidobacterium probiotics has been associated with a halving of LOS rate in our centre. As observational data, these results could also reflect other improvements in care during the study period. Probiotics may help prevent LOS in high-risk preterm neonates but a large RCT is needed to address this question.

**IMAGES:**

https://www.eiseverywhere.com/eselectv3/v3/events/351149/submission/files/download?fileID=7b144a23c6b7c683830156573d92e090-MjAxOS0wNSM1Y2UyNjY2YW1wNGUx

Table. Baseline data and incidence of sepsis in the pre- versus routine- probiotics epochs.

**COI:** None declared.
ID: 679
TITLE: EPIDEMIOLOGY OF COAGULASE NEGATIVE STAPHYLOCOCCAL (CONS) INFECTIONS, ITS RESISTANCE PATTERN AND INCIDENCE OF CATHETER ASSOCIATED BLOOD STREAM INFECTION (CABSI) OVER 10 YEARS IN A NON-SURGICAL NEONATAL INTENSIVE CARE UNIT (NICU)
AUTHORS: Shiranthi Jayasekara 1; Andrea Cardoso Pinto 2; David Lim 3; Ghada Ramadan 4; Santosh Pattnayak 5
AFFILIATIONS: Oliver Fisher Neonatal Unit, Medway Maritime Hospital, Gillingham, Kent, UK

CONTENT:

Neonatal infection is a significant cause of mortality and morbidity especially in preterm and low birth weight (LBW) infants. Culture-proven sepsis before and after 48 hours of life are termed as early (EONS) and late onset neonatal sepsis (LONS). LONS is associated with prolonged hospitalisation and poor neurodevelopmental outcome. CONS are responsible for LONS and CABSI.

We contribute our culture-proven sepsis data to the Neonatal Infection Surveillance Network (neonIN) database in UK with other 30 neonatal units. The aim of this study is to find out the incidence of CONS and its resistance pattern, rate of CABSI in this non-surgical NICU.

This is a retrospective analysis of prospectively collected data for the period Jan 2009 - Dec 2018 on all culture-proven sepsis from blood, CSF and aseptically collected urine samples from the neonIN database. Number of live births, neonatal admissions, and number of babies born <28 weeks, weighing <1,000 grams, total catheter days, blood culture positive with central line in situ, and CABSI rates were collected from the Badgernet database.

The effect of different interventions like Matching Michigan in 2011, change of skin preparation following Antiseptic RCT for insertion of catheters (ARCTIC) trial in 2016 and the NICU Quality Improvement central line care bundle in 2017 on CABSI rates were studied. The resistance pattern of different CONS organisms was also studied over last decade.

Total numbers of live births and neonatal admissions were 49,532 and 9,927 respectively over last 10 years. Babies <28 weeks and weighing <1,000 grams were 6% and 5.3% of all admissions. 403 episodes of neonatal infections were reported (119 non-CONS + 284 CONS). 46 and 238 CONS episodes were reported as EONS and LONS respectively.

The incidence of neonatal infections was 2.4/1,000 live births and 11.98/1,000 admissions, if CONS were excluded. CONS infection rates were 5.9/1,000 live births and 28.6/1,000 admissions.

The sensitivity pattern of all CONS, mainly St. capitis, St. epidermidis, St. haemolyticus were studied. The overall sensitivity of teicoplanin fell from 100% in 2009 to 47% in 2018, while vancomycin sensitivity remained at 100% for all CONS infections. Total catheter days ranged between 1,303 and 1,811 per year, CABSI rate between 4.6 to 22.3/1000 catheter days. (Fig 1)

Non-Coagulase negative infection rate is comparable to other UK neonatal units; however CONS infection rate is higher, particularly in early onset sepsis. Implementation of stringent infection control policies, NICU quality improvement central line care bundle have demonstrated decrease in CONS infection and CABSI rates. Teicoplanin sensitivity has progressively declined over last decade and Vancomycin remained sensitive to all types of CONS.

IMAGES:
https://www.eiseverywhere.com/eselectv3/v3/events/351149/submission/files/download?fileID=462d05fddc13efad5dec e3b6996a2743-MjAxOS0wNSM1Y2UyNyj2Y2I4ODM5

Catheter associated blood stream infection (CABSI) rates from 2009-2018

COI: None declared

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ID: 705

TITLE: EPIDEMIOLOGY OF SERRATIA MARCESCENS INFECTION AND CARRIAGE IN A NEONATAL INTENSIVE CARE UNIT

AUTHORS: Maria Tsirigotaki 1, Nicole-Hilda Anagnostatou 1, Olga Michopoulou 1, Sofia Maraki 2, Eleftheria Hatzidaki 1

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CONTENT:

Serratia marcescens (SM) is a gram-negative bacterium recognized as a cause of healthcare-related outbreaks in neonatal intensive care units (NICU). SM may colonize the nasopharynx and the gastrointestinal system and can cause invasive (bloodstream, CNS, respiratory tract infections) and noninvasive (conjunctivitis, urinary tract) infections in neonates.

We performed a retrospective, cohort study including all SM clinical isolates in neonates admitted to a level III NICU from 2013 to 2018. Clinical and microbiological characteristics were reviewed.

From January 2013 to December 2018, we detected 80 neonates with SM (37 infections, 43 colonizations). The mean gestational age at birth was 33.7 weeks (range of 25 to 41 weeks) and the mean birth weight was 2055gr (range of 740 to 3600gr). The vast majority of neonates were preterm (67/80, 83.7%), 23.7% required prior endotracheal intubation, 31.2% had central catheter devices and 33.7% received parenteral nutrition. The most common infections were conjunctivitis (18/37), bloodstream (16/37) and CNS infections (2/37). A cluster of cases was observed between February 2015 and March 2016 involving 61/80 neonates. All isolates were resistant to ampicillin, amoxicillin/clavulanate and cefoxitin and in their majority susceptible to carbapenems (78/80) and ciprofloxacin (80/80). The mean length of stay was 33.1 days (1 to 254) and the case fatality rate was 3.7%.

Serratia marcescens can cause recurrent and long-lasting outbreaks in NICU despite close surveillance and hygiene measures. We emphasize the importance of early implementation of aggressive infection control measures in patients, caregivers and NICU personnel.

COI: None declared
ID: 890

TITLE: USING AN EARLY ONSET SEPSIS CALCULATOR TO GUIDE DECISION-MAKING DOES NOT CAUSE A DELAY IN STARTING ANTIBIOTICS IN INFANTS OVER 35 WEEKS' GESTATION

AUTHORS: Adam King; Charlotte Weeks; Laura Croucher; Sarah Davidson; Mike Hall

AFFILIATIONS: Neonatal Department, Princess Anne Hospital, University Hospitals Southampton NHS Foundation Trust, Southampton, UK

CONTENT:

Early Onset Sepsis (EOS) describes infection in the newborn within 72 hours. NICE guideline CG149 uses a combination of clinical indicators and risk factors to advise which babies need antibiotics for prevention and treatment for EOS. In the USA the use of a sepsis calculator has been shown to safely reduce the proportion of infants who receive antibiotics. CG149 formed the basis of decision-making for starting antibiotics in our UK maternity hospital setting up to September 2018, when it was replaced by an EOS risk calculator for babies ≥35+0 weeks’ gestation. This study assessed whether use of the calculator was associated with a delay in the initiation of antibiotic treatment.

Blood culture data were reviewed for babies born ≥35+0 weeks’ gestation between April 2018 – August 2018 when CG149 was in use (“Period 1”). The age in days on which antibiotic treatment commenced was recorded following review of the clinical records. The same data were then recorded for babies born between September 2018 – January 2019 when the Kaiser Permanente EOS calculator was in use (“Period 2”). All babies who had blood cultures taken in Period 1 received antibiotics, while in Period 2 not all infants who had cultures taken had antibiotics. This was not a practice previously used on our unit. Blood cultures taken in other paediatric locations in infants up to 14 days old were reviewed during Period 2 to identify any septic babies after discharge from maternity services.

During “Period 1” 286 blood cultures were reviewed and all patients found to have been started on antibiotics. The average day for commencing antibiotics was within the first 24 hours (range 0-4 days). During “Period 2” 191 cultures were reviewed, and 169 of the infants cultured were started on antibiotic treatment. Again, the average day of taking the blood culture was within the first 24 hours (range 0-4 days). This is outlined in Table 1. Comparison using a Mann Whitney U Test shows no difference in the day of taking culture using CG149 or an EOS calculator to guide decision-making (p=0.44). There was one readmission who went on to grow Group B Streptococcus. They presented clinically unwell and started treatment on day 3. This infant was not highlighted as at risk by either CG149 or by the EOS calculator.

We have demonstrated that using an EOS calculator as a decision-making tool does not delay the decision to treat for presumed EOS when compared to practice using CG149. There was no increase in the number of babies presenting to paediatric services with presumed sepsis following discharge from maternity services. Ongoing review and analysis will be needed to establish the safety of using an EOS calculator in clinical practice.

IMAGES:
https://www.eiseverywhere.com/eselectv3/v3/events/351149/submission/files/download?fileID=52ce55c7b7d7c73360c66fac6b247159-MjAxOS0wNSM1Y2UyNjY2ZDFiNzk0

Table 1 – A table comparing the day of taking blood cultures in Period 1 (using CG149) and Period 2 (using the Kaiser Permanente EOS calculator)

COI: None Declared
ID: 932
TITLE: IS EMA SCORING SYSTEM USEFULL TO ANTICIPATE THE CAUSATIVE ORGANISMS FOR LATE NEONATAL SEPSIS?
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AFFILIATIONS: 1 Neonatology Unit, Department of Pediatrics, Dr. Gazi Yasargil Education and Research Hospital, Diyarbakir, Turkey
2. Neonatology Unit, Dr. Zekai Tahir Burak Maternal Education and Research Hospital, Ankara, Turkey

CONTENT:
Neonatal sepsis is a common serious condition that leads to mortality and long-term morbidity in neonates. The diagnosis of sepsis in neonates is still problematic because no specific clinical symptom or biochemical markers are defined currently. Several studies conducted to anticipate causative agents of sepsis for diagnose and early intervention. The aim of this study was to investigate whether EMA scoring system can differentiate gram negative (-) and gram positive (+) sepsis in proven neonatal sepsis.

We conducted a retrospective cohort study of infants cared for at a single tertiary care neonatal intensive care unit between 1 March 2016 and 30 August 2018. Medical records of all infants with proven sepsis were reviewed. Symptoms and biochemical markers at the time of sepsis diagnosis and empirical antibiotics were recorded and used for scoring. The patients were divided into two groups regarding the organism grown in blood cultures as Gr (-) and Gr (+) sepsis groups.

One hundred ninety one cases of proven neonatal sepsis were included in the study. One hundred three patients (54%) had gram positive organisms and 88 cases (46%) had gram negative organisms as causative agents. Mean gestational weeks of gram positive and gram negative groups were 29.6 (± 5.8) and 29.3 (± 3.9) weeks, respectively (p = 0.69). Birth weights of two groups were similar (1422 (± 760) grams and 1294 (± 770 g) (p = 0.25), respectively). EMA scoring gave a diagnosis of 87.2% of proven gram-negative sepsis cases and this ratio was 40% for proven gram-positive sepsis cases. There was a significant difference between the two groups in terms of positive EMA scores (p <0.01).

EMA scoring system failed to define more than half of Gr (+) positive sepsis cases. In infants with high EMA scores Gr (-) sepsis might be suspected and management should be done accordingly. New sepsis scores specific to the newborn are still needed.

COI: None declared