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Background Inflammation and infection are important aetiological factors in development of preterm birth. Inflammation is associated with many disorders of preterm infants including periventricular leukomalacia, chronic lung disease and necrotising eneterocolitis.
Aims To compare neutrophil and monocyte responses to lipopolysaccaride (LPS) +/-APC (activated protein c) stimulation in preterm neonates < 32 weeks gestation with adults controls.
Methods Whole blood was incubated with LPS +/-APC and Toll-like receptor4 (TLR4), CD11b expression, and reactive oxygen intermediate (ROI) release from neutophils and monocytes was examined by flow cytometry.
Results Both adults (n=15) and preterm neonates (n=30) had significantly increased LPS induced neutrophil CD11b expression but preterms are less responsive than adults. There was a significant increase in neutrophil ROI in response to LPS in adults and preterm neonates on day 1 and this was significantly reduced by APC There was significant higher baseline and endotoxin response of monocyte ROI in preterm neonates compared to adult ($p<0.05$). However APC had not reduced this response.
Conclusion Increased ROI release may mediate tissue damage and was significantly increased in preterm neonates and adults. APC reduced LPS-induced neutrophil ROI release. This may benefit preterm neonates at high risk of multiorgan inflammatory disorders but they are at high risk of haemorrhage. Further examination of APC mutants with anti-inflammatory but decreased anticoagulant properties is merited.

1191 LATE ONSET SEPSIS IN PREMATURE INFANTS. ARE WE ABLE TO PREDICT WHO IS SEPTIC OR NOT?

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Aim To prospectively assess staff prediction of culture positivity, clinical signs noted and suggested duration of antibiotic therapy required at the time of septic screen in premature infants suspected of having late onset sepsis.
Methods This was a prospective study involving anonymous staff questionnaires filled out by both nursing and medical staff at the time of septic screens performed for suspected late onset sepsis in the neonatal intensive care unit (NICU) of Rotunda Maternity Hospital, Dublin from October 2009 to 2010. Eligibility criteria was defined as premature infants (< 34 weeks gestation) and > 5 days old undergoing septic work up for suspicion of infection. Prospective review of all blood, urine and CSF cultures obtained from the neonates. Staff opinion on the likelihood of positive BC was correlated with laboratory results and treatment course.
Results Total of 60 surveys collected in the twelve month period. Information is available from 56 septic work ups carried out on 37 infants during twelve month period on infants who fulfilled the criteria. Doctors correctly guessed if the infant was septic or not at the time of work up 58.3% compared to 56.3 % of nursing staff. There was no stasticial significance between C-reactive protein, white cell or neutrophils counts between positive and negative cultures.
Conclusion Experienced doctors and nurses were unable to accurately predict which neonate would have a positive culture. This highlights the difficulty in the NICU setting of judging correctly who is septic in very low birth weight infants.

1192 TITLE: WBC COUNT IN PROBABLE AND CULTURE PROVEN NEONATAL SEPSIS, AND IT'S AFFECT ON MORTALITY

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Aims The aim of this study was to ascertain the prevalence of high and low WBC count on admission among the cases of probable and culture proven neonatal sepsis, and its affect on mortality rate.
Methods WBC count (by Madonic CA 620 analyzer) of all patients admitted in NICU, Fazl-e-Omar Hospital, Rabwah with provisional diagnosis of neonatal sepsis were recorded. Cases of culture proven sepsis, or probable sepsis were included in this study and were treated with appropriate antibiotics.
Results 469 neonates were included in this study. 136(29%) cases were having culture proven sepsis and 333(71%) were cases of probable sepsis. 315(67.2%) were early onset and 154(22.8%) were late onset sepsis. 363(77.4%) cases were discharged, 38(8.1%) left against medical advice, and 68(14.5%) died. Mean WBC count of all the cases in this study was 19.756, median was 17.20, and standard deviation was 10.883. Mean WBC count in early onset and late onset cases was 20.92 and 17.36 respectively ($p=0.006$). Mean WBC count in probable sepsis and culture proven sepsis was 19.99 and 19.16 respectively ($p=0.435$). 333 had normal WBC count (5000–30000) and in these 41(12.4%) died. Among 81 cases with WBC count >30000, 18(23%) died. And in 17 patients with WBC count < 5000, 9(53%) died. ($p<0.001$).
Conclusions Majority of cases of neonatal sepsis have normal WBC count. Those with leucopenia suffer highest mortality, followed by those with high WBC count as compared with those with normal WBC count. Cases of early onset have higher WBC count.

1193 HOW TO USE C-REACTIVE PROTEIN IN SEPTIC SCREENING OF TERM AND NEAR TERM NEWBORNS?

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Background and Aims Early onset sepsis is a serious condition, with challenging diagnosis.

C-Reactive Protein cut-off values for treatment vary according to different authors and protocols from 5 mg/L to 50 mg/L.

The objective of this study was to determine the CRP cut-off value in septic screening of term and near term NB.
Methods All NB with gestational age (GA) ³ 35 weeks admitted to the nursery of a tertiary hospital in the course of one year, with risk for early neonatal sepsis where included.

We collected data from all analysis (CRP/CBC) until treatment decision, peripheral blood-culture and clinical findings.

A positive septic screening (indicating treatment) resulted from a score involving CRP and leukocy te/neutrophil count.

Newborns were thereafter included in the category "presumption of infection" (POI) if they met at least one of the following criteria: CRP > 50 mg/L; maternal sepsis; NB with positive blood-culture; several positive markers and subtle clinical features; multiple risk factors and subtle clinical features.
Results From 2478 NB admitted, 193 were included, mean GA 38.7 weeks. CRP for untreated NB varied between 10 and 16mg/L. Those that underwent antibiotic therapy had CRP values between 10 and 151mg/L.

CRP for NB with POI varied between 22 and 151mg/L, treated but with no late presumption of infection between 10 and 48mg/L.

A cut-off level of 20mg/l would have selected 16 without POI and missed none.

Conclusions The authors recommend for this population to use a cut-off level of 20mg/L to start antibiotics.

1194 USEFULNESS OF DELTA NEUTROPHIL INDEX FOR ASSESSING NEONATAL SEPSIS

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Objectives Early detection and aggressive treatment for neonatal sepsis is important for survival. This study investigated the significance of calculated delata neutrophil index (DNI) as a prognostic factor of severe sepsis.
Methods In a retrospective study, 72 neonates admitted to Severance Children's Hospital and Gangnam Severance Hospital between Jan 2009. to Dec 2010, were recruited. Twenty four infants were diagnosed as blood proven sepsis, and 48 neonates matched for gestation were recruited as controls. Among 24 infants, 5 patients died within 7 days.
Results In univariate analysis, mean DNI (at diagnosis, after 24hr and 72hr), C-reactive protein and WBC for sepsis group were significantly higher, and neutrophil count, platelet count were significantly lower than control groups. Among sepsis group, mean DNI at diagnosis (6.5 vs 3.7 p=0.048), DNI at 72hr (8.4 vs 2.1, p=0.003) CRP at 72hr (67 vs 21, p=0.010) and platelet count (85000 vs 141000, p=0.008) for patient with mortality were significantly increased compared to the patients with survival. Other demographic factors are not remarkable. In multiple logistic regression analysis, mortality in sepsis significantly correlated with DNI at 72hr, odds ratio (OR) 1.47, 95% confidence interval (CI) 1.1–5.6 (p=0.032), and with platelet, OR 0.93, 95%CI 0.51–0.99 (p=0.014). In ROC analysis, provided DNI at 72hr at cut off value of 12% predicted mortality with 81% sensitivity and 87% specificity.
Conclusion DNI can have implications for sepsis and may be valuable to assess the prognosis of patient with sepsis.

1195 INFLUENCE OF PROCALCITONIN (PCT) LEVELS ON THE DIRECTION OF THE THERAPY OF PERINATAL INFECTIONS

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Background and Aims One the main causes of perinatal mortality is infection. PCT measurement is regularly performed in our clinical practice. Along with the clinical condition, PCT level is an important factor in the decision of therapeutical interventions. Depending on the condition, immunoglobulin and pentoxifylline administration is considered. We wanted to examine, how much our therapeutical decisions were influenced by the PCT levels measured.
Methods We analyzed retrospectively the data of the neonates admitted in 2011 to our tertiary Neonatal Intensive Care Unit. PCT was measured routinely at the age of 16–32 hours.
Results Depending on the severity of the clinical condition and the PCT levels empiric antibiotic treatment (1st group; 34.5±4.6 gestational weeks, 2435±892 g; n=29), antibiotic therapy plus pentoxifylline (2nd group; 35.7±3.8 gestational weeks, 2515±858g; n=27) and antibiotics plus intravenous immunoglobulin with or without pentoxifylline (3rd group; 33.6±3.5 weeks; 2211±851g; n=26) were given. There was no significant difference between the groups, regarding the gestational ages and birthweights. There was a significant difference among the three groups, regarding the PCT levels at the age of 18–32 hours: (8.7±4.2; 23.3±18.4 and 34.3±219 ng/ml). There was a notable decrease of the PCT levels in every group.
Conclusions Although the dynamics of PCT show a pronounced difference, compared to the later life, with an adequate evaluation along with the clinical status it is an important tool in the diagnostics of perinatal infections. Its analysis together with the application of the immunomodulant pentoxifylline therapy may decrease the use of immunoglobulins.

1196 NORMAL VALUES OF C REACTIVE PROTEIN IN TERM BABIES

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Aim To assess the normal values of C reactive Protein (CRP) in our population. We included only those babies in which we had no retrospective doubt of having no infection.
Material and Methods We studied all babies born in the year 2010 in the Siena hospital, in whom PCR was measured for the risk of neonatal infection. we excluded from this retrospective analysis the following babies: Gestational age < 38 weeks, positive hemocolture, high blood cell count, antibiotic treatment already begun before CRP determination.
Results Results are reported as follows: a-Babies (n) b-Mean CRP value (mg%) c-SD. Before 12 hours form birth: babies n99, CRP0.14, SD0.20. At 24 hours babies n92, CRP0.42, 0.61. At 36 hours n8, CRP0.38, SD0.56. At 48 hours babies n349, CRP0.44, SD0.51. At 72 hours babies n145, CRP0.31, SD0.38. At 96 hours babies n52, CRP0.20, SD0.30. At 108 hours n9, CRP0.05, SD0.10At 120 hours babies n4, CRP0.06, SD0.06.
Conclusion These date are useful to have CRP normality parameters in the newborn: they confirm that in the first hours of life, CRP values are far higher than those of the adults.

1197 ROLE OF LABORATORY TEST IN NEONATAL SEPSIS DIAGNOSIS

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Background Early detection of sepsis in neonate is one of the most difficult problems facing neonatal care providers and clinicians today. The ability to early diagnosis or rule out neonatal sepsis results in to limit inappropriate antibiotic exposure and lowering the cost of therapy.

This study was conducted to determine the value of some laboratory test in early detection for neonatal septicemia. Besides this, we wish to know the comment causal organisms for neonatal sepsis in our situations.
Aim To determine if any laboratory tests can predict neonatal sepsis prior to positive blood culture.
Method Is a cohort prospective study. Rule in, admitted children ages < 28d in our NICU during 2011, with suspected infection. Based on clinical and biological findings, diagnoses were categorized in: A: proven sepsis(positive blood culture) B: probable sepsis(negative blood culture but laboratory consist with sepsis. C: clinically sepsis without any positive culture or laboratory abnormalities.

The validity of laboratory tests which had performed as sepsis work-up, were compared against positive blood culture as gold standard test.
Results The most common causative organisms were E.coli (50%). Among laboratory tests, CRP had the best sensitivity(84.12%) and negative predictive value (91.3%), but poor positive predictive value (59.5%), the specificity of it was 74.46%. WBC, I/T>0.2, and segments >10% have high specificity to rule out sepsis.
Conclusion No laboratory tests alone can be used as early detection of septicemia accurately.