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Correlation of Platelet Count with Specific Causative Organism in Culture Positive Sepsis Neonates - An Observational Cohort Study

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Abstract

Introduction: Thrombocytopenia is one of the frequent hematological issues seen in neonatal sepsis. Thrombocytopenia can be noted in both gram-positive and gram-negative septicemia. Hence it can be considered a predictor for sepsis in neonates

Methods: This study was conducted in Kangaroo Care Women and Children Hospital. Study Design: Retrospective and Prospective Observational Cohort study was conducted. Study Duration: 18 months (January 2022– June 2023). Inclusion Criteria: Neonates admitted to NICU with Culture Positive Sepsis were included in the study. Exclusion Criteria: Neonates with maternal history suggestive of placental insufficiency, low platelet counts, and family history of bleeding disorders.

Results: Out of 429 admissions in NICU, 33 neonates had culture-positive sepsis. Among 60.6% of Gram-negative organisms, Acinetobacter baumannii was the commonest seen in 21.2% of neonates. Among 33.3% Gram-positive organisms, coagulase-negative Staphylococcus was the commonest, present in 15.15% neonates. Among 12.1% Fungal Sepsis, all isolated were Candida spp. Few cases had multiple organism infections. Severe thrombocytopenia was seen in 51.51% of neonates, moderate thrombocytopenia in 6.06%, and mild thrombocytopenia in 9.1%. The total mortality was high (33.33%) in septic neonates all cases were with severe thrombocytopenia. The most common organism causing mortality was Candida spp. (27.27%), followed by Klebsiella pneumoniae and Escherichia coli.

Conclusions: Mortality was higher in Gram-Negative sepsis. A large percentage of newborns admitted with sepsis had thrombocytopenia. Therefore, thrombocytopenia can be regarded as one of the earliest nonspecific predictors of sepsis in newborns admitted to the NICU. It also greatly affects the outcome.

Keywords: Neonatal sepsis; Thrombocytopenia; Blood culture; Gram-negative organism

Introduction

Neonatal sepsis, a critical condition characterized by a systemic infection within the first 28 days of life, continues to be a leading cause of morbidity and mortality in newborns worldwide (50-60%) [1]. Early diagnosis and effective management of neonatal sepsis are essential to improve the outcomes.

Among the various hematological markers that have gained attention in the context of neonatal sepsis, platelet counts have emerged as a potentially

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22. Vergnano S, Sharland M, Kazembe P, Mwansambo C, Heath PT. Neonatal sepsis: an international perspective. Arch Dis Child Fetal Neonatal Ed 90 (2005): F220-F224.

23. Charki S, Kulkarni T, Biradar VS, Kalyanshettar SS. Platelet count in culture positive neonatal sepsis and its correlation with specific causative organism- a prospective cohort study. Indian J Appl Res 10 (2020): 1–4.

24. Levy MM, Fink MP, Marshall JC, Abraham E, Angus D, et al. International Sepsis Definitions Conference. 2001 sccm/esicm/accp/ats/sis international sepsis definitions conference. Intensive Care Med 29 (2003): 530-538.

25. Bhat S, Naik S, Rafiq W, Tariq AS. Incidence of thrombocytopenia and changes in various platelet parameters, in blood culture positive neonatal sepsis. Int J Pediatr 3 (2015): 757-766.

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