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Clinical Profile and Outcome of Preterm with Thrombocytopenia

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Abstract
This study intends to find out thrombocytopenia related clinical profile and outcome in preterm neonates (<37 weeks). In our study 108 preterm neonates admitted in NICU of RMMCH Chidambaram with thrombocytopenia were studied. The prevalence of thrombocytopenia in preterm in our study is 11.25%. The majority of thrombocytopenia (87.96%) was diagnosed before 72 hrs of age. It was mild 66.67%, moderate 25% and severe 8.33% % of cases.
Keywords: *Neonatal thrombocytopenia, Sepsis, Respiratory distress, Congenital malformations, Neonatal intensive care unit, Neurodevelopment.*

Introduction

Thrombocytopenia in neonates is defined as a platelet count of less than 1.5 lakh/µl [1,2,3] It is classified as mild (platelet count - 1 to 1.5 lakh/µl). Moderate (platelet count - 0.5 to1 lakh/µl) and severe (platelet count < .5/µl)[1]. The etiology and predisposing factors are many and they interact in a complex manner. Though the overall prevalence of neonatal thrombocytopenia is relatively low (1%-5%) in general population[2,3], the incidence among the preterm neonates admitted in NICU is 11.25%. Thrombocytopenia is most common hematological abnormatilty among preterm neonates admitted to the NICU. Many aspects of neonatal thrombocytopenia such as clinical impact, morbidity, neuro developmental outcome were studied.

Materials and Methods

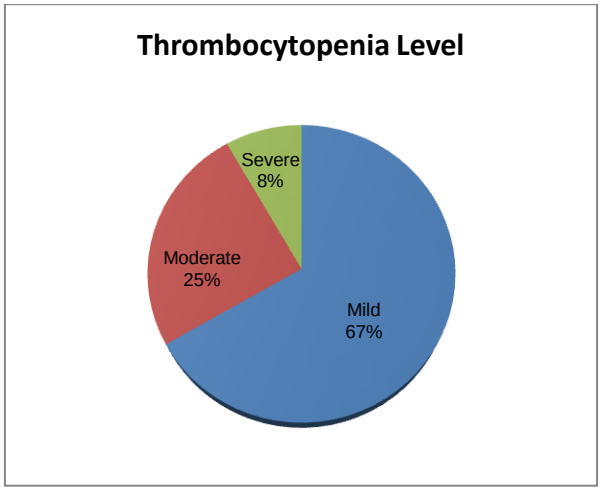
108 of 960 consecutive neonates admitted in NICU for a period of 1 year who are preterm and had thrombocytopenia at least once during their neonatal period irrespective of underlying morbidity were taken up for this study. Through clinical examination and blood investigations were done. Diagnosis of sepsis was based on positive blood or spinal fluid culture. Platelet type of bleeding was recorded from symptoms such as petechiae, ecchymoses, gastro intestinal bleeding and prolonged bleeding from venopucture or heel stick sites.

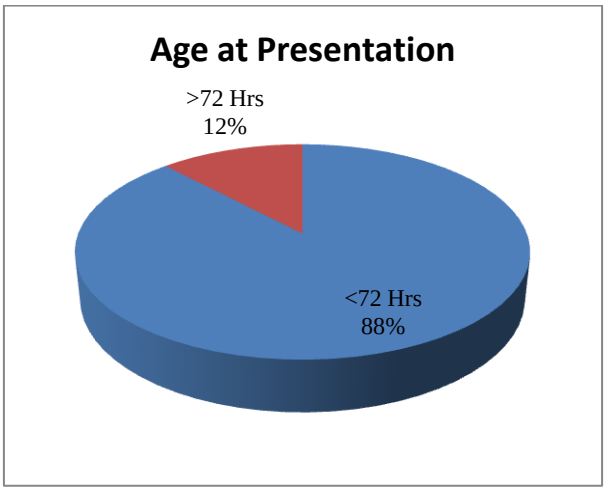
Neonates who were discharged to home were categorized as survivors. Mortality was defined as death before discharge. Follow up of the surviving neonates were done using the Trivandrum developmental scale. Relevant datas were taken and analysed using statistically using Chi-Square test.

Results

Among 960 neonates admitted in NICU RMMCH, the prevalence of thrombocytopenia is

11.25%. These subjects were divided in to three groups based on their platelet count. The prevalence of mild thrombocytopenia is 67.67%. Moderate thrombocytopenia is 25%, severe thrombocytopenia is 8.33%. Among 108 cases were presented with thrombocytopenia out of which 97 had an early onset thrombocytopenia and 13 had a late onset thrombocytopenia. The most common clinical examination findings seen in preterm neonates with thrombocytopenia in our study is respiratory distress (34.26%) followed by hemorrhagic manifestation (11.11%).





Most important cause found for respiratory distress being sepsis. 49.07% of cases found to have positive septic work up. 15.74% of cases found to have positive blood culture, the growth being E.coli.

The most common site of bleeding is GIT (26%) followed by mucocutaneous bleed (22.43%). Intracranial bleed, puncture site bleed, ET tube site bleed are the other sites were bleeding was noted

The mortality rate was high among preterm with congenital malformations. Among the surviving neonates the neurodevelopmental delay was noted in 18.75%. Morbidity is more among early onset sepsis (76%). Proportion of preterm with severe thrombocytopenia needed transfusion. Transfused neonates survival is better compared to non-transfused neonates.

Discussion

Preterm newborns with age less than 72hrs admitted to NICU had the greatest risk of developing thrombocytopenia. The prevalence for being early onset thrombocytopenia being 87.96% compared to the study by L.Bonifacio et all [5] with a prevalence of 67% for late onset thrombocytopenia. In Severe thrombocytopenia the organisms cultured being e.coli, while in the study conducted by L. Bonifico et all the organism being Candida. Similar to the study conducted by Hutter[7] et all the most common cause being sepsis which is the same in our study as well. The most common site of bleeding being gastro intestinal compared to other studies kahn et all the site being mucocutaneous. The infant with severe thrombocytopenia who received blood products had low morbidity rate compared to others.

Conclusion

Thrombocytopenia is one of the most common laboratory finding seen in neonates admitted in NICU.[4,5,6] Major etiology being septicemia and the most common clinical presentation is respiratory distress. Mortality is high among neonates with thrombocytopenia associated with congenital malformations. Neurodevelopment outcome does not depend on the severity of thrombocytopenia, but poor morbidity is seen in severely thrombocytopenic neonates.

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