

An observational analytical study of causes, severity, risk factors and outcome of thrombocytopenia in a pediatric intensive care unit

Chhaya Akshay Divecha¹, Milind S Tullu², and Tanmayee S Thombare²

¹National University of Science and Technology (formerly Oman Medical College), Oman

²Seth G.S. Medical College & KEM Hospital, India



Abstract

Aims and Objectives: Thrombocytopenia, commonly encountered in intensive care units, has been shown to be independent predictor of mortality and prolonged hospital stay in critically ill. We conducted a study in Pediatric Intensive Care Unit (PICU) to determine the causes and severity of thrombocytopenia as well as patient outcomes (bleeding and mortality).

Materials and Methods: Observational study was conducted in PICU of tertiary care hospital, India after ethics committee approval. Data was derived from routine examinations and investigations. Detailed information about demographic data, clinical data, length of stay (LOS), periodic platelet counts, primary diagnosis, complications, sites of bleeding (if any), use of mechanical ventilation and outcome in PICU were noted.

Results: Occurrence of thrombocytopenia in study population (N=491) was 60.3%. Mild, moderate, severe and very severe thrombocytopenia was seen in 27%, 32.1%, 34.1% and 6.8% patients respectively. Causes of thrombocytopenia were sepsis (27%), part of primary illness (25.7%), undetermined cause (24.7%), nosocomial sepsis (21.2%) and drugs (1.4%). 237 (48.3%) patients had bleeding during PICU stay. Maximum patients (26.1%) had respiratory system involvement. Risk factors associated with thrombocytopenia were sepsis, shock and mechanical ventilation. Patients with thrombocytopenia had longer PICU and hospital stay. Patients with infectious disease and haematological disorders had statistically significant chances of thrombocytopenia. Shock was significantly associated with increasing severity of thrombocytopenia. Presence of thrombocytopenia and increasing severity were associated with higher mortality.

Conclusions: Thrombocytopenia is a readily available risk marker of mortality and increased PICU stay. Patients having sepsis, shock and mechanical ventilation are at higher risk of developing thrombocytopenia. cerium precursor is one of the valuable factors used to monitor the growth of the particles. The catalytic performance of ceria was found to be dependent on the morphology of the catalysts. The catalytic performance of CeO₂ in the form of nanorod shapes is better than that of nanocubes and bulk. The deposition of gold nanoparticles on different shaped CeO₂ much improved their catalytic presentation. This enhancement in catalytic performance was, however, more significant in the case of rod-shaped ceria.

Key words: Thrombocytopenia, Nosocomial sepsis



Biography:

Chhaya Akshay Divecha has completed her Undergraduate as well as Post-graduate (MD Pediatrics) from the reputed Seth G.S. Medical College & KEM Hospital at Mumbai, India. She has also obtained fellowships in Neonatal Intensive Care and Pediatric Intensive Care from the same reputed institution. Currently, she is an Assistant Professor in Pediatrics at College of Medicine, National University of Science and Technology (formerly Oman Medical College) at Sohar, Sultanate of Oman. She has more than 10 years of teaching experience and has published many papers in reputed journals as well as contributed to chapters in four textbooks.

Speaker Publications:

1. "Parental knowledge and attitudes regarding asthma in their children: Impact of an educational intervention in an Indian population"; *Pediatric Pulmonology*. / 2020 / 55(3) / pp 607-615.

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