



Neonatal sepsis - adjunctive therapy in preterm infants

Georg Frey

Darmstadt children's clinics Princess Margaret, Germany

Abstract

Neonatal sepsis is a major cause of morbidity and mortality throughout the world. Neonates are particularly susceptible due to their undeveloped and immature immune system. Burden of the disease varies widely between countries largely dependent of the economic situation. In the developing world the incidence of neonatal sepsis ranges from 2.9 to 24 per 1000 livebirths whereas in the USA it is 0.76. Several research projects have investigated aspects of the issue of neonatal sepsis such as: MOSAIC– looking at access to Intensive care facilities and mortality, PROGRESS – which examined factors associated with IVH in very premature babies and registries for surveillance of infection. These initiatives have done a great deal to elucidate the problem of access to adequate patient-centered care and expose different international/regional challenges. The adaptive immune system in a neonate especially if preterm is characterized by its immaturity. At birth the new-born will have a certain amount of IgG due to transplacental passage from the mother. However, IgM is not able to cross the placenta. Therefore, this important immunoglobulin is almost completely lacking in new-borns. IgM is essential for the elimination of bacteria and endotoxins. A number of prospective studies have been carried out using IgM enriched immunoglobulin as an adjunctive therapy alongside standard care with some success in septic shock. There are certain considerations which must be taken into account with invasive bacterial infections in neonates compared to older children such as differentiation from SIRS, portal of entry of the infection and its rapid progression to septic shock. A recent study including almost 500 neonates demonstrates a clear benefit of using IgM-enriched immunoglobulin as adjuvant therapy for neonatal sepsis. In addition, when considering the latest Meta- analysis and the outcomes of several studies using IVIg in suspected or proven infection a clear benefit of IgM-enriched immunoglobulin could be demonstrated.

Biography

Georg Frey is medical director of the new-born intensive care unit 17a of the mother and child center at the Darmstadt children's clinics Princess Margaret, Germany. He is a member of the specialist committee for neonatology in Hesse, DEGUM tutor in pediatrics and a member of the examination board of the State Medical Association of Hesse. He holds a teaching position at the Johann Wolfgang Goethe University in Frankfurt and has been on the FOCUS list of top doctors in Germany since 2013.



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