

## *Hospital Infections and Management In Neonatal Intensive Care Units*

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**Abbreviations:** NICU: Neonatal Intensive Care Unit; NI: Nosocomial Infection

### **Editorial**

Today, the rates for keeping advanced premature and low birth weight babies alive have increased due to developing intensive care conditions [1]. However, the neonates, especially the preterm and low birth weight infants, have a poor defense system against microorganisms. The neonates are susceptible to infections particularly due to undeveloped defense barriers, poor ability to localize the pathogens, and the immature cellular and humoral defense mechanisms. Furthermore, the factors, including the risk for infection, include extended follow-up of the NICU patients, invasive interventions, low birth weight, preterm birth, total parenteral nutrition and congenital anomalies [2, 3]. Nosocomial infection is one of the most significant causes of morbidity and mortality in NICU infants. Considering it occurs within 48-72 hours after birth, it is also called late neonatal sepsis. The most common infections are circulatory infections, pneumonia, and urinary system infections. The rate of the hospital-acquired infections in the NICU varies between 7% and 24%, depending on the intrinsic

(gestational age and birth weight) and extrinsic factors (number of patients under care, the frequency of invasive intervention, number of experienced personnel, medical equipment and infrastructure, and medical treatments) [4]. Due to the increased chance of survival for the premature and very low birth weight infants in recent years, NIs are a significant problem of NICUs. Nosocomial infections account for not just morbidity and mortality, but also for the prolonged hospital stays and increased healthcare costs [1, 3].

The microorganisms causing hospital-acquired infections vary by country, as well as across years. Previously, the most common agent was *S. aureus*, whereas the gram-negative microorganisms and the coagulase-negative staphylococci are the most commonly identified pathogens in the following years and at present. Today, the multiple drug-resistant acinetobacters pose a significant problem [5].

Mortality and morbidity will be reduced if the modifiable factors are known and precautions are taken for nosocomial infections. It is possible to minimize NIs associated with health care through some important strategies and practices. These may include: proper hand-washing before and after every instance of contact with the infant, preventing the transmission of pathogen microorganisms via healthcare personnel; periodic training of the personnel; paying strict attention to environmental cleaning; establishing principles for using central venous catheters; restricting the use of invasive tools; rational use of antibiotics for the treatment and prophylaxis for the extrinsic risk factors; immunological support; topical cream

applications in order to enable the protective function of the skin and early enteral nutrition with breast-milk; and the use of probiotic agents in order to increase the barrier effect of the gastrointestinal system epithelium for intrinsic risk factors. In addition to these strategies and practices, regularly conducted surveillance at the hospitals and the monitoring of surveillance data, and the establishment of intensive care units' own infection agent statuses and resistance rates can contribute to infection management [1-3].

## References

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