

## **Neonatal Sepsis: A Two-Year Review of the Antibiograms of Clinical Isolates from the Neonatal Unit**

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**Background:** Neonatal Sepsis is one of the leading causes of morbidity and mortality in Neonatal Intensive Care Units. Identifying the most common organisms and their susceptibility patterns improve the management of infections.

**Objective:** To evaluate the incidence of Neonatal Sepsis and to identify the most common organisms, their sensitivity patterns to antimicrobials and to formulate future empiric therapy for patients.

**Design:** A Retrospective Study.

**Setting:** NICU, King Hamad University Hospital, Bahrain.

**Method:** Patients admitted to the NICU from 1 July 2013 to 30 September 2015 were reviewed. Sixty-seven patients with positive blood cultures were suspected to have sepsis. Early Sepsis, 18 (26.9%) and late Sepsis, 49 (73.1%), were included in the study. Patients with contaminated blood cultures, cultures with mixed growth and those have been referred from other hospitals with external blood culture reports were excluded.

The following data were documented: culture and sensitivity, antibiotics used, neonatal and maternal risk factors and severity of sepsis and the outcome.

**Result:** Sixty-seven neonates were included in the study, 34 (50.7%) were males. The incidence of early onset neonatal sepsis compared to late onset neonatal sepsis was 26.8% and 73.1%, respectively. The most common pathogenic organism was Coagulase-Negative Staphylococci (CONS) in 32 (47.7%) neonates, followed by gram-negative bacilli in 17 (25.4%) neonates.

Coagulase Negative Staphylococci species were susceptible to Tazocin and Linezolid. The gram-negative bacilli were mainly sensitive to Amikacin and Imipenem along with Tazocin. All Group B Streptococcus cultures were sensitive to Ampicillin compared to approximately 57 (85%) only being sensitive to Vancomycin, Linezolid and Penicillin.

**Conclusion:** This is the first study in our NICU. The study revealed the organisms seen in the unit, their sensitivity patterns and the antibiotics used compared to what should be used. This study provides a foundation to improve the standard of care for neonatal Sepsis.