

## Bacteriological Profile of Neonatal Sepsis

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Neonatal sepsis is a clinical syndrome of systemic illness accompanied by bacteremia occurring in the first month of life and is a significant cause of morbidity and mortality among neonates worldwide. This study was aimed to identify the isolated bacteria and their antibiotic susceptibility patterns colonizing in the blood stream of clinically diagnosed sepsis in neonates admitted to Special Care Baby Unit of 550 Bedded Mandalay Children Hospital. Hospital based cross-sectional descriptive study was performed by collecting venous blood from 150 neonates during January to September 2018. Blood samples were cultured by conventional blood culture method. Antibiotic susceptibility testing of isolated bacteria was performed according to the Clinical and Laboratory Standards Institute (CLSI) (2017) guideline. Out of 150 neonates, 59.4% (89/150) were late onset neonatal sepsis and 40.6% (61/150) were early onset neonatal sepsis. Study population included full-term babies (70.6%, 106/150), preterm babies (28.7%, 43/150) and post-term babies (0.7%, 1/150). Among 43 preterm babies, 3 babies (7%) were blood culture positive. Out of 106 full-term babies, 13 babies (12.3%) showed blood culture positive. Only one post-term baby (100%) was blood culture positive. Out of 87 normal birth weight babies, 8 babies (9.2%) were blood culture positive. The culture positivity was 13.7% (7/51) in low birth weight group babies. Among 12 very low birth weight neonates, 2 neonates (16.7%) showed blood culture positive. Seventeen bacteria pathogens were isolated from 150 neonatal sepsis cases (11.3%). Coagulase negative staphylococci (CoNS) was the predominant bacteria isolated 70.6% (12/17), followed by *Klebsiella* species 11.8% (2/17), *Enterobacter* species 11.8% (2/17) and *Pseudomonas* species 5.8% (1/17). All isolated CoNS were sensitive to vancomycin (100%) followed by gentamycin and levofloxacin (83.4%) each. For isolated CoNS, the most resistant drug was penicillin (58.3%) followed by azithromycin (33.5%), oxacillin (25%), levofloxacin (16.6%) and gentamycin (8.3%). Two isolated CoNS (16.7%) were multidrug resistant. All isolates of *Klebsiella* and *Enterobacter* species were sensitive to amikacin, gentamycin, levofloxacin, piperacillin-tazobactam, imipenem and resistance to ampicillin (100%). *Pseudomonas* species was isolated from only one case and it was sensitive to amikacin but resistance to ceftazidime, imipenem, ofloxacin, cefepime, ampicillin, norfloxacin, levofloxacin and gentamycin. In conclusion, CoNS was the most common bacterial pathogen in blood samples of neonates at 550 Bedded Mandalay Children Hospital.