**Abstract**

**Background:** Peripheral intravenous catheters are increasingly used in neonatal intensive care unit (NICU) to administer intravenous fluids, blood products, drugs and nutrition. Catheter infection is associated with increased morbidity, mortality, and duration of hospital stay.

**Objective:** To determine colonization rate of intravascular (IV) catheters and catheter related bacteremia in NICU of Qods hospital.

**Methods:** This was a descriptive study carried out on 100 infants whose catheters were removed for any reason. A length of 3 cm from the catheter tip was cut aseptically and placed in thioglycolate media. In case of any growth within the next 7 days, subcultures on blood agar and MC agar media were performed followed by bacterial identification. Drug susceptibility profiles of isolated bacteria were detected according to standard methods. Before catheter removal, blood sample from each infant, was taken for culture, microbiological identification and susceptibility assay.

**Findings:** Of 100 catheter tips, 35 (35%) samples produced positive identifications, as identified in 19 cases (52%) identified as coagulase negative staphylococci (CNS). Positive blood cultures were found in samples of 7 patients (7%), all from catheters colonized with bacteria, and identified as CNS (4 samples) and coagulase positive staphylococcus (3 samples). Among the CNS isolated from catheters, the highest resistance (100%) was related to ampicillin and Oxacillin and the lowest (18%) resistance associated with vancomycin.

**Conclusion:** Application of intravascular catheters in neonates should be accompanied with great attention in making a balance between the need for vascular access and the risk of bacteremia and thus, adequate control and rigorous preventive measures must be established when a vascular access is a necessity.

**Keywords:** Catheter, Colonization, Bacteremia, NICU