INTRODUCTION

Intravascular catheters are indispensable in modern- day medical practice, particularly in intensive care units (ICUs). Although such catheters provide necessary vascular access, their use puts patients at risk for local and systemic complications, including catheter related infection (CRIs), particularly catheter related blood- stream infections (CR-BSIs) which are associated with increased morbidity, mortality rates of 10% to 20%, prolonged hospitalization, and increased medical costs ***(CDC, 2002).***

(CRBSI) are considered "silent" medical errors since they may be caused without operator knowledge during placement, site care, or line manipulation. Since there is a time delay before the infection presents, the "cause" and effect" are often not correlated. Nosocomial bloodstream infections contribute to hospital associated morbidity, mortality, and economic burden. ***(Slonim et al., 2001).***

Biofilm – associated bacteria show an innate resistance to antibiotics, disinfectants, and clearance by host defenses. These properties likely contribute to the persistence and resistance to treatment of staphylococcal biofilm infections. ***(Jeremy et al., 2004).***

The majority of serious CRIs are associated with central venous catheters (CVCs), especially those that are placed in patients in ICUs. In the ICU setting, the incidence of infection is often higher than in the less acute in- patient or ambulatory setting. In the ICU, central venous access might be needed for extended periods of time; patients can be colonized with hospital- acquired organisms; and the catheter can be manipulated

multiple times per day for the administration of fluids, drugs, and blood products. Moreover, some catheters can be inserted in urgent situations, during which optimal attention to aseptic technique might not be feasible ***(McGee and Gould, 2003).***

Several factors have been described in the adult population as playing a role in the occurrence of nosocomial CRBSI. These factors include prolonged catheterization, poor aseptic insertion technique, emergent catheter placement, size of catheter, number of lumens, type of catheter material, location of catheter and frequency of catheter manipulations (catheter factors) ***(Raad et al., 1996).***

Other factors include presence of an infusion therapy team, use of sterile barrier precautions, type of insertion site dressing, and frequency of system entry (hospital factors). Patient- related factors have also been identified, which include age, granulocytopenia, immune suppression and severity of underlying disease. ***(Singh- Naz et al., 1996).***

Warren and his colleagues (2006) found that ICU policies and practices regarding the insertion and care of CVCs vary considerably from hospital to hospital and ICUs may be able to improve patient outcome if evidence- based guidelines for CVC insertion and care are implemented ***(Warren et al., 2006).***