Colonization in 3-way stopcock connectors and needleless connectors

The aim of this study was to examine the colonization in 3-way stopcock (TWS) connectors and needleless connectors (NCs) that integrated into central, port, and peripheral venous catheters” Sengul et al (2019).

Abstract:

Background: Microorganisms causing catheter-related bloodstream infections colonize to intravenous catheters (IVC)—particularly to connectors mounted to catheters. The aim of this study was to examine the colonization in 3-way stopcock (TWS) connectors and needleless connectors (NCs) that integrated into central, port, and peripheral venous catheters.

Methods: This random, experimental study consisted of 180 connectors that were inserted into the IVCs of patients in general surgery, reanimation intensive care, and daily chemotherapy units. Cultures of the connectors were obtained at least 48 hours after connecting to IVCs.

Results: This study showed that gram-negative, gram-positive, and other pathogens reproduced, although their colonization level was not high enough to develop an infection. When the results of colonization for patients using TWS and NC were compared, the peripheral venous catheters (using a TWS) resulted in a significantly higher increase in reproduction than in patients using NC (P ≤ .01) and no significant difference in the level of colonization in other types of connectors or catheters (P > .05).

Conclusions: The study’s results indicated no significant difference between NC and TWSs in terms of reproduction. It should also be noted that connectors integrated into IVC pose a risk in the development of catheter-related bloodstream infections.

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