

“Cultures of closed NCs can be used to rule out catheter tip colonization and are superior to hub cultures in ruling out short-term central venous catheter colonization” gumbo et al (2015).

Reference:

Guembe, M., Pérez-Granda, M.J., Cruces, R., Martín-Rabadán, P. and Bouza, E. (2015) Cultures of Needleless Connectors Are Useful for Ruling Out Central Venous Catheter Colonization. Journal of Clinical Microbiology. April 15th. .

Abstract:

Semiquantitative cultures of skin surrounding the intravascular catheter entry site and catheter hubs have a high negative predictive value for catheter tip colonization. However, culturing samples from the inner side of the hub requires the catheter to be manipulated, thus increasing the risk of migration of microorganisms to the bloodstream. Today, hubs are closed using needleless connectors (NCs). Culture of NCs could predict catheter colonization. Our objective was to compare the yield of NC sonicate culture for prediction of catheter colonization with that of hub cultures. For 6 months, we prospectively collected all short-term central lines and systems removed from patients admitted to the cardiac surgery postoperative care unit irrespective of the reason for withdrawal. Hub cultures were obtained immediately before withdrawal and cultured using the semiquantitative method. Catheter tips were cultured using the roll-plate technique and sonication, and NCs were cultured using a semiquantitative technique after sonication. We considered the NC to be colonized when ≥ 1 culture was positive. We collected a total of 75 central systems. The catheter colonization rate was 10.7%. The rates for hubs and NC colonization were 6.7% and 12.0%, respectively. The validity values of hubs/NCs for prediction of catheter colonization were as follows: sensitivity, 25.0%/87.5%; specificity, 95.5%/97.0%; positive predictive value, 40.0%/77.8%; negative predictive value, 91.4%/98.5%; and validity index, 88.0%/96.0%.

CONCLUSION: Cultures of closed NCs can be used to rule out catheter tip colonization and are superior to hub cultures in ruling out short-term central venous catheter colonization.

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