

Reducing the Degree of Colonisation of Venous Access Catheters by Continuous Passive Disinfection

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INTRODUCTION

The advent of Luer-type needleless venous access catheters has been accompanied by a growing number of catheter-related bloodstream infections. Our main objective was to compare rates of colonisation and phlebitis between our standard of care and the new passive disinfection system, using a Luer SwabCap bearing a sponge impregnated with 70% isopropyl alcohol.

METHODS

We performed a prospective experimental study involving patients attending our day hospital oncology unit, with central venous (CV) or peripheral venous (PV) access lines with needleless connectors for antineoplastic treatment delivery. We assessed the colonisation rate by culture of the inside of the hubs (qualitative culture) and also assessed the possible appearance of phlebitis and the extra cost of introducing the new system in our oncology day hospital; nurse satisfaction was evaluated by a questionnaire. The effectiveness of the isopropyl alcohol disinfection cap was evaluated by analysing rates of catheter colonisation and phlebitis between two groups: group 1 comprised of patients receiving the standard disinfection method and group 2 comprised of patients receiving SwabCaps on any venous access connectors. Samples were taken from the catheter lumen through a sterile swab seeded in Luria Bertani-rich broth and cultivated for at least 48 h at 37°C. We also assessed the extra cost of introducing the new system in our oncology day hospital, and nurse satisfaction was evaluated by a questionnaire.

RESULTS

29 patients were included (13 in group 1 and 16 in group 2). In group 1, 56% of the samples were taken from CV access connectors versus 40% in group 2. Bacterial growth was detected in 43.7% of group 1 samples versus 0% in group 2 ($p=0.006$). No differences in the degree of contamination were found between CV and PV access connectors. No cases of phlebitis were observed. Nurse satisfaction with the new system was 9.2 out of a maximum score of 10. The incremental cost of incorporating the new system in our oncology unit was estimated at €1.87 836.

CONCLUSION

Passive disinfection systems help reduce colonisation of venous access catheters without requiring large economic investment or special training of health personnel.

Full Study Available In:

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