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O062: Contamination of umbilical catheters by Staphylococcus epidermidis in neonatology: is there a link with a change in the standard of care?

I Soulake[1*], A Gayet-Ageron[1], N Bochaton[2], S Touveneau[1], P Rimensberger[2], R Pfister[2], D Pittet[1], W Zingg[1]

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Introduction

The presence of *Staphylococcus epidermidis* (SCE) on umbilical venous (UVC) or artery catheters (UAC) suggests defects either in catheter care or in hand hygiene compliance.

Objectives

The aim of this study was to assess colonization of UVC and UAC with SCE before and after care practice of such catheters was changed.

Methods

This observational before-after study was conducted in the neonatology unit of HUG between January 2002 and December 2012. SCE-colonization rates before and after protocol change in August 2011 was compared by chi-square test and Poisson regression model. In the new protocol, UVC and UAC were not covered by a dressing but left at air. All neonates with the following risk factors were eligible: gestational age [GA] <32 weeks, birth weight <1500g, invasive device, surgery, use of parenteral nutrition, systemic antibiotics.

Results

In total, 2832 neonates were analyzed. Mean birth weight (±SD) was 2179g (±970) and 213 neonates had GA < 32 weeks(7.5%). SCE colonization on UVC and UAC was 54/1070 (5.1%) and 16/435 (3.7%), respectively. Colonization on UVC was significantly higher after procedure change in the univariate (53.7/1000 catheter-days versus 9.6/1000; P<0.001) as well as in the multivariate analysis adjusting for GA, birth weight, and multiple pregnancy (IRR [95% CI]: 2.4 [1.4-4.3]; P=0.003). Colonization of UAC was significantly higher after procedure change in the univariate (43.5/1000 cathter-days versus 7.9/1000; P<0.001) as well as in the multivariate analysis (IRR [95%CI]: 5.0 [1.7-15.2]; P=0.004). No association was found for catheter-related bloodstream infection.

Conclusion

Leaving umbilical catheters exposed to air rather than protected by a dressing may result in significant colonization with SCE. Larger studies must confirm our findings and test the hypothesis whether such practice promotes bloodstream infection.

Disclosure of interest

None declared.

Author details
[1]Infection Control Programme, University of Geneva Hospitals (HUG), Geneva, Switzerland. [2]Enfant et adolescent, University of Geneva Hospitals (HUG), Geneva, Switzerland.

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[1]Infection Control Programme, University of Geneva Hospitals (HUG), Geneva, Switzerland
Full list of author information is available at the end of the article