In critically ill patients, 2% chlorhexidine-alcohol is superior to 5% povidone iodine-alcohol for skin preparation before central venous and arterial catheters; whether this finding can be extended to PVC inserted in the wards remains speculative” Guenezan et al (2019).

Abstract:

INTRODUCTION: Short peripheral intravenous catheters (PVCs) are the most frequently used invasive medical devices in hospitals. Unfortunately, PVCs often fail before the end of treatment due to the occurrence of mechanical, vascular or infectious complications, which prolongs hospitalisation and increases healthcare costs and mortality. Prevention of these complications is mainly based on the respect of hygiene rules and the use of biocompatible catheters. In critically ill patients, 2% chlorhexidine-alcohol is superior to 5% povidone iodine-alcohol for skin preparation before central venous and arterial catheters; whether this finding can be extended to PVC inserted in the wards remains speculative. Similarly, the use of new technologies such as catheters designed to minimise blood exposure, zero-reflux needleless connectors, disinfecting caps and flushing PVCs before and after each medication administration to maintain catheter patency are of theoretical interest to prevent PVC failure, but little scientific data support their routine use.

METHODS AND ANALYSIS: The CLEAN 3 study is an open-label, single-centre, randomised, two-by-two factorial trial. One thousand patients visiting our emergency department and requiring hospital admission in the wards will be randomised to one of four strategies.
Skin antisepsis with chlorhexidine-alcohol versus povidone iodine-alcohol according to skin preparation and devices used. The two primary endpoints will be (1) the incidence of infectious complications related to the catheters (colonisation, local infection or bloodstream infection) and (2) the time between catheter insertion and catheter failure defined as any premature removal of PVC before end of treatment, other than for routine replacement.

ETHICS AND DISSEMINATION: This protocol has been approved by an independent ethics committee and will be carried out according to the principles of the Declaration of Helsinki and the Good Clinical Practice guidelines. The results of this study will be disseminated through presentation at scientific conferences and publication in peer-reviewed journals.

TRIAL REGISTRATION NUMBER: EudraCT 2018-A02535-50; NCT03757143.

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