Antimicrobial dressings for the prevention of catheter-related infections in newborn infants with central venous catheters

Nai Ming Lai1,2, Jacqueline E Taylor3, Kenneth Tan3, Yao Mun Choo1, Azanna Ahmad Kamar1, Nor Asiah Muhamed4, Roslaili Khairudin4

1Department of Paediatrics, University of Malaya, Kuala Lumpur, Malaysia. 2School of Medicine, Taylor’s University, Kuala Lumpur, Malaysia. 3Monash Newborn, Monash Medical Centre/Monash University, Clayton, Australia. 4Medical Research Resource Centre, Institute for Medical Research, Kuala Lumpur, Malaysia

Contact address: Kenneth Tan, Monash Newborn, Monash Medical Centre/Monash University, 246 Clayton Road, Clayton, Victoria, 3168, Australia. kenneth.tan@southernhealth.org.au.

Editorial group: Cochrane Neonatal Group.


Copyright © 2014 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

To assess the effectiveness and safety of antimicrobial (antiseptic or antibiotic) dressings in reducing CVC-related infections in newborn infants. We also plan to evaluate the effects of antimicrobial dressings in different subgroups, including infants who received different types of CVCs, infants who required CVC for different durations, infants with CVCs with and without other antimicrobial modifications, and infants who received an antimicrobial dressing with and without a clearly defined cointervention.

BACKGROUND

Description of the condition

Central venous catheters (CVC) are essential devices in the care of sick individuals. A CVC provides a relatively secure access for administering intravenous medications, fluids and parenteral nutrition. It is estimated that, annually, five million and 200,000 CVCs are used in the USA and UK, respectively (Worthington 2005). One of the major problems associated with the use of CVCs is catheter-related infections, which have been shown to cause significant morbidity and mortality associated with considerable costs to the healthcare system (CDC 2011; Gicalini 2004). It is estimated that in the USA approximately 80,000 cases of CVC-associated bloodstream infections (BSIs) occur in intensive care units (ICUs) every year, with a mortality rate of up to 35% and estimated associated healthcare costs ranging from US$296 million to US$2.3 billion (CDC 2011). These estimates, however, are based mainly on adult data.

CVCs are frequently placed in newborn infants in the neonatal intensive care unit (NICU). Infants in the NICU represent a distinct group of individuals who are particularly at risk of infections due to their compromised skin barrier and immature immune system (Ygberg 2012). The presence of a CVC represents a significant risk factor for catheter-related infection in newborn infants, in particular catheter-related BSI (CRBSI) (Chien 2002; Couto...