Reduction of blood stream infections in children following a change to chlorhexidine disinfection of parenteral nutrition catheter connectors.

Pichler J, Soothill J, Hill S.

Source

Department of Paediatric Gastroenterology, Great Ormond Street Hospital NHS Trust, London WC1N 3JH, UK; Department of Paediatric and Adolescent Medicine, Medical University of Vienna, Austria. Electronic address: judith.pichler@medunwien.ac.at.

Abstract

BACKGROUND & AIMS:

Catheter-related-blood-stream-infection (CRBSI) might be prevented by optimal catheter connector antisepsis in children with intestinal failure on parenteral nutrition (PN). We changed the disinfectant used from isopropanol 70% to chlorhexidine 2% in 70% isopropanol, which leaves a residue of chlorhexidine on the connector.

METHODS:

We conducted this before/after study in children treated with PN for >28 days. Episodes of CRBSI were recorded for all 42 children treated for >28 days during May-November 2006 before introducing chlorhexidine and for all 50 children treated in May-November 2007 after chlorhexidine was introduced. The number of hospital-acquired CRBSI and number of PN days was counted for each period. The rate of CRBSI/1000 catheter days and the proportion of patients that experienced at least one CRBSI during the two periods were compared.

RESULTS:

There were 3.1 CRBSI/1000 catheter days prior to using chlorhexidine and 0.4 CRBSI/1000 catheter days after it was introduced, p = 0.03. Prior to chlorhexidine 10/42 (24%) patients experienced at least one episode of CRBSI, compared to 3/50, (6%) after introducing it (p = 0.02). The survival rate in both periods was similar, but after chlorhexidine significantly more children made a full recovery and a lower proportion of children had irreversible intestinal failure (p = 0.01).

CONCLUSIONS:

Our results support the use of 2% chlorhexidine not only to reduce risk of sepsis for central venous catheter connector antisepsis in catheters used for intravenous nutrition, but also to improve the patients’ chances of recovering intestinal function.

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