Service Priorities and Programmes

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Submitting author: Ms F Y CHAN
Post title: Senior Nursing Officer, United Christian Hospital

Peripheral venous catheter – SMALL WIPES pave the road to quality improvement with BIG IMPACT

CHAN FYR (1)(2), CHAN MY(2), LEUNG MW(2), SHAM SYA(2), FUNG SCK(1)
(1)Infection Control Team, United Christian Hospital, (2)Nursing Services Division, United Christian Hospital

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Introduction

Peripheral venous catheter (PVC) insertion is one of the most common invasive procedures in healthcare. PVC related bacteremia is an emerging health problem associated with significant morbidity, mortality and cost. The incidence can be decreased by optimization of skin antisepsis. Chlorhexidine (CHG) is active against a wide range of bacteria and yeasts; and has a residual antimicrobial effect on skin. CHG skin antisepsis is a key element in the bundle for prevention of central catheter associated blood stream infections. Chlorhexidine-alcohol is widely used for preoperative skin disinfection. Prior to this study, alcohol was routinely used in our hospital for skin antisepsis. We hypothesised that chlorhexidine-alcohol would be more effective than alcohol for skin antisepsis in the prevention of PVC related bacteremia.

Objectives

To evaluate the incidence of peripheral venous catheter related MRSA bacteremia before and after replacement of alcohol with chlorhexidine-alcohol for skin antisepsis.

Methodology

This was a quality improvement initiative to evaluate the impact of replacement of 70% isopropyl alcohol (IPA) by 2% CHG in 70% IPA for skin antisepsis. Six acute general medical wards were recruited. The study period was from 1 Feb 2016 to 31 Jan2017; data obtained from the year immediately before the study (1 Feb 2015 – 31 Jan 2016) was used for comparison. The presence of relevant adverse reaction and the MRSA bacteremia rates for the studied wards were determined.

Result

Results & Outcome:

- There were no systemic adverse events or severe skin reactions reported.
- The overall MRSA bacteremia rates decreased from 0.24 to 0.18 per 1000

patient bed days after implementation

- Chlorhexidine–alcohol was associated with lower incidence of hospital acquired MRSA bacteremia (0.02 vs 0.07 per 1000 patient bed days with alcohol alone). The ratio of the bacteremia rates (intervention period/ non-intervention period) is 0.32 (95% CI 0.032-1.790); p = 0.172. The incidence of community acquired MRSA bacteremia remained the same at 0.16 per 1000 patient bed days at both time-periods.

Conclusions:

Chlorhexidine–alcohol is well tolerated. There were no systemic adverse events or severe skin reactions reported. Chlorhexidine–alcohol is more effective than alcohol as skin antiseptic, and should be considered for prevention of peripheral venous catheter related bacteremia.