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Published

2012

Journal Title

Queensland Nurse

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New research on IV catheters overturns 40 years of practice

BY S KEOGH FOR NHMRC CENTRE FOR RESEARCH EXCELLENCE IN NURSING

New evidence from NCREN researchers suggests the millions of peripheral intravenous catheters used each year can be safely changed only when clinically necessary, overturning 40 years of accepted practice involving routine replacement every three days.

The research was published in the September 2012 edition of *The Lancet*.

Introducing such a policy would not only prevent unnecessary painful procedures in 20% of patients but also dramatically reduce equipment and staff costs.

Currently the US Centers for Disease Control and Prevention (CDC) state that peripheral catheters do not need to be replaced more frequently than every 72-96h to reduce the risk of infection and phlebitis in adults (O'Grady et al, 2011).

If even 15% are needed for more than three days, then a change to clinically indicated replacement would prevent up to six million unnecessary

intravenous catheter insertions in the US alone. This would save about two million hours of staff time and up to US\$60 million in health costs each year.

In the study, 3283 adult patients expected to require a catheter for longer than three days were enrolled from three hospitals in Queensland.

Patients were randomly assigned to either clinically indicated or routine removal every third day to compare the effectiveness of each practice at reducing infection and phlebitis.

The mean catheter dwell time was 99h (SD 54) in the clinically indicated group and 70h (SD13) in the routine replacement group. Phlebitis occurred in 7% of patients in both groups, blood-stream infections were rare and did not differ between groups, and no local infections were reported in either group.

Other significant findings of the study include the high proportion of catheter failures, at nearly 30%. The failure of catheters due to infiltration, occlusion, or accidental removal was far more frequent than phlebitis or infection.

The results of the study are consistent with previous smaller randomised controlled trials (Rickard et al, 2010; Van Donk et al, 2009; Webster et al, 2007; Webster et al, 2008), and a systematic review showed no benefit of routine replacement for phlebitis or catheter-related blood stream infections (Webster, 2010).

The CDC guidelines already recommend clinically indicated treatment in children (O'Grady et al, 2011).

Thus much evidence now suggests that clinically indicated replacement of peripheral intravenous catheters is safe. ■

The June edition of *tqn* reported on the establishment of the National Centre of Research Excellence in Nursing (NCREN) in Queensland. We are now pleased to report that future editions of *tqn* will include a regular feature on the research being conducted by our colleagues at NCREN.

For more information visit www.griffith.edu.au/health/centre-research-excellence-nursing

Source list

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Professor Claire Rickard applies an IV catheter.

Source: Griffith University