

It remains unclear as to whether patients are best trained for catheter care at home or in hospital or whether CRBSIs are lower if the patient self-cares for the CVC” Bond et al (2017).

Abstract:

BACKGROUND & AIMS: Prevention of catheter related blood stream infections (CRBSI) and salvage of infected central venous catheters (CVC) are vital to maintaining long term venous access in patients needing home parenteral nutrition (HPN). It remains unclear as to whether patients are best trained for catheter care at home or in hospital or whether CRBSIs are lower if the patient self-cares for the CVC. Furthermore, there is minimal data on the longer term outcome following salvage of infected catheter and limited consensus on agreed protocols for catheter salvage.

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METHOD: We conducted a retrospective 5-year evaluation of CRBSI occurrence and CVC salvage outcomes in adult patients requiring HPN managed at a national UK Intestinal Failure Unit from 2012 to 2016. Prior to 2012, patients were primarily trained to administer PN in hospital; thereafter, patients underwent training at home.

RESULTS: A total of 134 CRBSI were recorded in 92 patients (62 patients with a single CRBSI and 30 patients with more than 1 CRBSI) in a cohort of 559 HPN patients, with a total of 1163 HPN years. The overall CRBSI rate was 0.31 per 1000 catheter days. CNS were the most common isolates (41/134 (30.5%)), followed by polymicrobial infections (14/134 (10.4%)), Klebsiella spp. (16/134 (11.9%)) and methicillin - sensitive Staphylococcus aureus (MSSA) 5/134 ((3.7%)). Salvage was not attempted in 34 cases due to methicillin - resistant (MRSA) infection (1/34), fungal infection (13/34) or clinical instability due to sepsis (20/34). Of the 100 cases where salvage was attempted, 67% were successful. 82.8% of CNS salvage attempts were successful; there was no difference in salvage rates between CNS CRBSIs salvaged with a 10-day (22/26) or 14-day protocol (7/9) ($p = 0.4$). CRBSI rate, in those cared for by trained home care nurses was the lowest at 0.270 (self care: 0.342 and

non-medical carer (e.g. family member): 0.320) ($p = 0.03$).

CONCLUSION: We previously reported a sustained very low CRBSI rate in a large cohort of HPN patients in a national unit; we now further report that this is not influenced by training patients at home rather than in hospital but is influenced by the individual managing the catheter at home. CNS remains the primary cause of CRBSIs and can be successfully salvaged with a reduced duration of antibiotic therapy compared to our previous experience.

Reference:

Bond, A., Teubner, A., Taylor, M., Cawley, C., Abraham, A., Dibb, M., Chadwick, P.R., Soop, M., Carlson, G. and Lal, S. (2017) Assessing the impact of quality improvement measures on catheter related blood stream infections and catheter salvage: Experience from a national intestinal failure unit. *Clinical Nutrition*. October 10th. .

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