

**Avoidance, prompt recognition and appropriate management of CVC-related infections are crucial components of IF care. However, there are few, if any, data on the occurrence of CVC-related infections in patients with acute, type 2, IF managed on a dedicated IF unit and no data on the salvage outcomes of infected CVCs in this group of patients” Bond et al (2018).**

Abstract:

**INTRODUCTION:** The management of intestinal failure (IF) requires safe and sustained delivery of parenteral nutrition (PN). The long-term maintenance of central venous catheter (CVC) access is therefore vital, with meticulous catheter care and salvage of infected CVCs being of prime importance. CVC-related infection and loss of intravenous access are important causes of morbidity and mortality in IF. Avoidance, prompt recognition and appropriate management of CVC-related infections are crucial components of IF care. However, there are few, if any, data on the occurrence of CVC-related infections in patients with acute, type 2, IF managed on a dedicated IF unit and no data on the salvage outcomes of infected CVCs in this group of patients.

**METHODS:** This is a retrospective observational study conducted between January 2011 and July 2017. All patients with acute, type 2 IF newly admitted to a national U.K. IF unit (IFU) during these dates were included. All patients admitted to the unit with a CVC in place underwent immediate ‘screening’ paired central and peripheral blood cultures on arrival before the CVC was used for any infusate. A prospectively maintained database was used to record all confirmed catheter-related blood stream infections (BSI)/colonisations, demographic and clinical data. Diagnosis of catheter-related BSI/colonisation was based on quantitative and qualitative analysis of paired central and peripheral blood cultures. A standardized 10-14-day catheter salvage treatment protocol involving antibiotic and urokinase CVC locks and systemic antibiotic administration was used to salvage any infected or colonised CVCs, as appropriate. The CVC was not used for PN until successful salvage had been confirmed by negative blood cultures drawn 48 h after antibiotic completion. The development of a subsequent catheter-related BSI was recorded for all patients, both during the remaining in-patient stay on the IFU and after discharge home on PN.

**RESULTS:** Of the 509 patients with type 2 IF admitted to the IFU during the study period, 341 (54% female; mean age 54.6 (range 16-86 years)) had an indwelling CVC that had been placed in the referring hospital. Surgical complications and mesenteric ischaemia were the most common underlying disease aetiologies. Sixty-five of 341 (19.1%) patients had an infected/colonised CVC on the initial screening set of blood cultures. A successful CVC salvage rate of 91% was achieved in this cohort after antibiotic therapy. The subsequent in-patient catheter-related BSI rate for those admitted with a CVC (n = 341) on the IFU was 0.042 per 1000 catheter days, over a total of 23,548 in-patient catheter days. Two hundred and seventy nine of 341 patients were discharged on home PN (HPN); with a subsequent catheter-related BSI rate on HPN of 0.22 per 1000 catheter days (mean duration of HPN = 778 catheter days (range:)) over a follow-up period of 216,944 out-patient catheter days. There was no increased risk of HPN-related catheter-related BSI (p = 0.09) or mortality (p = 0.4) in those admitted with an infected CVC.

**CONCLUSION:** This is the first study to report catheter-related BSI/colonisation rates and salvage outcomes in patients with type 2 IF newly admitted to a dedicated IF Unit. We report that nearly one-fifth of all patients were referred with evidence of a catheter related BSI/colonisation; despite this, successful catheter salvage is possible and, with stringent CVC care, an extremely low subsequent catheter related BSI rates can be achieved and maintained during in-patient stay on a dedicated IF Unit and after discharge on HPN. These data provide novel evidence to support ESPEN recommendations that patients with type 2 IF are managed on a dedicated IF Unit.

#### Reference:

Bond, A., Teubner, A., Taylor, M., Cawley, C., Varden, J., Abraham, A., Chadwick, P.R., Soop, M., Carlson, G.L. and Lal, S. (2018) Catheter-related infections in patients with acute type II intestinal failure admitted to a national centre: Incidence and outcomes. *Clinical Nutrition*. July 27th. .

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