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OC-032 OUTCOME ON HOME PARENTERAL NUTRITION: 33 YEARS EXPERIENCE FROM A NATIONAL CENTRE

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Introduction Home parenteral nutrition (HPN) is an essential treatment modality for patients with Type 3 intestinal failure (IF), but long term data on the factors associated with HPN dependence and survival are limited.

Methods Medical records of patients with IF who received HPN for more than 3 months from a national IF Unit between 1978 and 2011 were reviewed. Kaplan–Meier curves and Cox regression analysis were performed to identify factors associated with HPN dependence and poor prognosis.

Results Case notes of 547 patients were reviewed. The overall probability of survival was 89%, 67%, 58% and 27% at 1, 5, 10 and 20 years after starting treatment. Multivariate analysis demonstrated an association between diagnosis and survival; Crohn's disease, mesenteric ischaemia and pseudo-obstruction were associated with a better outcome. There was also an association with increasing age at IF diagnosis and poor outcome. There was no association between small bowel length or the occurrence of catheter-related infection and survival. 14.7% (25/170) of deaths were related to HPN complications. Line sepsis and IF-associated liver disease were considered to be the cause of death in 10 and 15 patients respectively (mean survival of these patients: 67 months (range 6–223); 32% within the first 2 years of treatment).

Continued HPN dependence in survivors was 83%, 63%, 59% and 53% at 1, 5, 10 and 15 years respectively. 80% of those who achieved nutritional independence from HPN did so within the first 7 years of treatment. Surgical reconstruction resulted in a shorter period of HPN dependence than adaptation and/or medical therapies (19.8 vs 32.8 months respectively) p=0.008. On multivariate analysis, mechanism of IF was significantly associated with the likelihood of HPN independence: patients with gastro-intestinal dysmotility or malabsorption were less likely to achieve HPN independence, whereas those with short bowel syndrome with or without enterocutaneous fistula were more likely achieve HPN independence. Of the latter group, patients with a small bowel length >150 cm were 3.5× more likely to achieve nutritional independence compared to those with <50 cm.

Conclusion This is the largest reported long-term experience of survival and dependence on HPN and will inform future decisions about evolving alternative therapies for type 3 IF, such as small bowel transplantation and lengthening. Nutritional autonomy can be achieved in a significant proportion of patients through adaptation, medical treatment of underlying disease and/or surgical reconstruction.

Competing interests None declared.

OC-033 TAUROLIDINE SIGNIFICANTLY REDUCES THE INCIDENCE OF CATHETER RELATED BLOOD STREAM INFECTIONS IN PATIENTS ON HOME PARENTERAL NUTRITION

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Introduction Catheter related blood stream infections (CRBSI) in patients receiving home parenteral nutrition (HPN) cause significant morbidity, are potentially life-threatening and through repeated line replacements may compromise venous access. We introduced products containing taurolidine as preventative antimicrobial line locks in 2006 for HPN patients who had repeated episodes of CRBSI and report the incidence of CRBSI before and after.

Methods Data were retrospectively collected from electronic and paper records for all adult HPN patients between January 2001 and October 2011.

Results Data were available for 19/22 HPN patients receiving taurolidine locks for a period of 51.9 patient years (21.5 years pre-taurolidine and 30.4 years post-taurolidine). Patients were offered taurolidine if they had: (1) two or more episodes of community borne CRBSI (2) one episode of CRBSI in patients with a persistent source of intra-abdominal sepsis (3) significantly compromised vascular access. The use of taurolidine significantly reduced the rate of CRBSI from 4.59 to 0.81 episodes per 1000 days (p<0.0001). Nine episodes of recurrent CRBSI occurred in five patients despite taurolidine (one patient had four further infections in 5.6 years). The organisms responsible were coag neg staph. (four episodes), pseudomonas (one episode), candida (one episode), mixed coliform and coag neg staph (one episode) and two cases which were culture negative.

Conclusion Our experience shows that taurolidine significantly reduces the rate of CRBSI, particularly in patients who have had at least two previous infections. It may also have a role in preventing infection in patients with foci of potential abdominal sepsis in the context of type 2 IF. Despite this, it should not be seen as a substitute for meticulous line access techniques as some patients continue to develop recurrent infections while on treatment.

Competing interests None declared.

OC-034 SALVAGE OF CENTRAL VENOUS CATHETERS IN HPN CATHETER-RELATED BLOOD STREAM INFECTIONS IS SAFE AND EFFECTIVE: 18 YEARS EXPERIENCE FROM A NATIONAL CENTRE

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Abstract OC-033 Table 1

	n	Male	Median age at HPN initiation years	Duration HPN treatment prior to taurolidine (median) days	Episodes of CRBSI per 1000 patient days pre-taurolidine (number of episodes)	Duration of HPN treatment post-taurolidine (median) days	Episodes of CRBSI per 1000 patient days post-taurolidine (number of episodes)
All patients	19	10	55	7846 (162)	4.59 (36)	11 088 (371)	0.81* (9)
2 or more episodes CRBSI	11	7	39	5188 (256)	6.17 (32)	6505 (348)	1.23* (8)
1 CRBSI plus persistent source of abdominal sepsis	4	1	71	24 (0)	0 (0)	845 (226)	0 (0)
Compromised vascular access	4	2	59	2634 (207)	1.51 (4)	3738 (812)	0.27† (1)

*p Value <0.0001 (proportion testing).
†p Value 0.08 (proportion testing).

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Introduction Catheter-related blood stream infections (CRBSI) are a serious and life-threatening complication in the provision of HPN. European guidelines recommend antibiotic salvage of central venous catheters (CVCs) with CRBSI, wherever possible, to minimise repeated catheter replacement and preserve venous access, but this is based on limited reported evidence.[1]

Methods Data were analysed from a prospectively-maintained register of all confirmed CRBSIs occurring in patients on HPN since January 1993 to December 2011, managed in a National Intestinal Failure Unit (IFU). Diagnosis of a CRBSI was based on quantitative and qualitative assessment of central and peripheral blood cultures and pour plates. Treatment was commenced according a standardised protocol involving antibiotic and urokinase CVC locks and systemic antibiotic administration.

Results A total of 299 CRBSIs occurred in 138 patients (66 single CRBSI, 72 multiple CRBSI) with 377 patients having no catheter infections. The mean number of catheter days prior to developing an infection was 712 (range 5–6128). This represents an overall rate of infection in all patients of 0.39 per 1000 catheter days. A single microorganism caused 87.9% of infections, most commonly coagulase negative staphylococcus (CNS; 49.5% cases). Overall catheter salvage was achieved in 62.2% (intention to treat) of all patients presenting with CRBSIs (Coagulase negative staphylococcus 70.5% (105/149), MRSA 36.4% (4/11), polymicrobial infections 58.3% (21/36), other *Staphylococcus aureus* 48.3% (14/29) and miscellaneous 56.8% (42/74)). Line salvage was not attempted in 46 patients because of life-threatening sepsis (n=18), fungal line infection (n=7), mechanical catheter problems (eg, co-existing line fracture; n=18) and tunnel line infection (n=3). The catheter was removed in 37.7% (95/299) of cases. There were five deaths in patients admitted to the IFU for management of the CRBSI.

Conclusion This is the largest reported series of catheter salvage in CRBSIs and demonstrates that catheter salvage according to a standardised protocol is a safe and effective strategy to preserve essential venous access in patients dependent on HPN.

Competing interests None declared.

REFERENCE

1. **Pittiruti M**, Hamilton H, Biffi R, *et al.* ESPEN guidelines on parenteral nutrition: central venous catheters (access, care, diagnosis, and therapy of complications). *Clin Nutr* 2009;**28**:365–77.

OC-035 RATES OF CATHETER-RELATED BLOODSTREAM INFECTION AND RISK OF CATHETER-RELATED VENOUS THROMBOSIS IN PATIENTS REFERRED FOR HOME PARENTERAL NUTRITION

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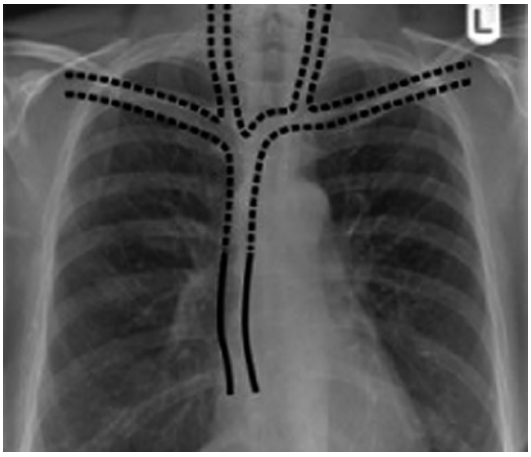
Introduction Parenteral nutrition (PN) via a central venous catheter (CVC) is associated with risk of thrombosis and catheter-related bloodstream infection (CRBSI). Factors believed to reduce the risk of infection include using a tunnelled CVC or peripherally inserted central catheter (PICC), and using a single lumen CVC where possible. A CVC tip above the mid-section of the superior vena cava increases thrombosis risk.[1] Strict aseptic technique is required to prevent CRBSI.

Methods Between 1st January and 31st December 2011 patients transferred to the St Mark's Intestinal Failure Unit with a CVC in situ for PN were assessed. We recorded CVC type, number of lumens, and CVC tip position (see Abstract OC-035 figure 1: dashed lines (mid & proximal superior vena cava (SVC), brachiocephalic, subclavian & internal jugular veins) & solid lines (distal third SCV, proximal & distal right atrium). CVC tip position in the dashed region is associated with a higher thrombosis risk (Cadman *et al*).[1] Blood cultures were taken from all lumens of the CVC. CVCs with bacteraemia were treated with antibiotics. If a CVC was felt to be unusable it was removed. Reasons included tip position, multiple lumens, unsuitable for long-term use (not PICC or tunnelled), or for use by patient (PICC), CVC-related sepsis, CRBSI at risk of seeding (*S aureus* or fungus), and >1 CVC in situ.



Abstract OC-035 Figure 1

Results 60 patients with 65s CVC from other centres were transferred. Some patients were admitted more than once. 24 were female and 36 were male, from 41 English Hospitals & two from Kuwait. 21 CVCs were tunnelled, 22 untunnelled, 21 were PICCs and one was a midline. Results are summarised in Abstract OC-035 table 1. 32(48%) CVCs had a tip that was too high, increasing thrombosis risk. 32% (21/65) of blood cultures were positive. 12 (18%) CVCs were retained and used. 13 (20%) were removed because of discontinuation of PN. 38 (58%) of CVCs were replaced.

Abstract OC-035 Table 1 Results

Number of lumens	Tip position	Culture result	Outcome of CVC
1: 33 (51%)	Good: 32 (49%)	Gram positive: 16 (25%)	Continued to use: 12 (18%)
2: 20 (31%)	High: 31 (48%)	Gram negative: 4 (6%)	Removed, not replaced: 13 (20%)
3: 8 (12%)	No CXR: 2 (3%)	Fungal: 1 (2%)	Removed, replaced: 38 (58%)
4: 2 (3%)		Sterile: 44 (68%)	Died: 1 (2%)
5: 2 (3%)			Unknown: 1 (2%)

Conclusion This data demonstrates that on transfer patients CVCs are often infected, have a tip that is too high and multi-lumen CVCs are placed inappropriately. Reasons may include lack of attention to aseptic technique, lack of awareness of the thrombosis risk from a high CVC tip, and lack of availability of single lumen tunnelled CVCs as stock.

Competing interests None declared.

REFERENCE

1. **Cadman A**, Lawrance JAL, Fitzsimmons L, *et al.* To clot or not to clot? That is the question in central venous catheters. *Clin Radiol* 2004;**59**:349–55.