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Hydrochloric acid and urokinase as a treatment for recurrent catheter-related bloodstream infections in patients on home parenteral nutrition

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The commonest complication for patients on home parenteral nutrition (HPN) is catheter-related bloodstream infection (CRBSI)⁽¹⁾. This institution uses a combination of 0.1 M-HCl and 10 000 IU urokinase together with 7 d antibiotics in order to treat recurrent CRBSI. However, there is limited information in the literature on its efficacy.

All patients on home parenteral nutrition receiving HCl and urokinase as the adjunctive treatment for recurrent CRBSI between 1 January 2006 and 31 December 2007 were included in the present study. CRBSI was classified as definite (pyrexia with positive central culture) or probable (pyrexia with only positive peripheral culture and an appropriate treatment response). For each CRBSI the following data were recorded as possible confounding factors: patient age; location (inpatient or outpatient); underlying aetiology; intestinal anatomy; presence of fistula; opiate requirement as analgesia; infective organism; type of care (self-care or nursing). CRBSI eradication was also noted, which was defined as no other infection within 6 months after the episode with either the same or a different organism.

From a total of 106 CRBSI first episodes of infection were excluded, leaving forty-six recurrent CRBSI in thirty patients (median age 52 (range 21–80) years, three males:five females). Twenty inflammatory bowel disease, twelve mesenteric vascular disease, five surgical complications, five motility disorder, one malignancy, one familial adenomatous polyposis and one radiation enteritis were seen in each episode of CRBSI. Within the forty-six CRBSI, eradication rate was 57.1% for those who received acid and urokinase compared with 44.4% for those who did not ($P=0.40$).

	First infection	Recurrent infection	
		Acid and urokinase	No acid and urokinase
Total no. of patients	60	28	18
Eradication	42	16	8
Eradication rate (%)	70.0	57.1	44.4

All possible confounding factors proved to be negligible (age, $P=0.13$; aetiology, $P=0.28$; location, $P=0.41$; fistula, $P=0.93$; nursing care, $P=0.84$; small bowel anatomy, $P=0.21$; colon anatomy, $P=0.57$; opiates, $P=0.54$; organism type, $P=0.34$; duration of antibiotic, $P=0.37$; definite or possible CRBSI, $P=0.87$).

There was no significant benefit of HCl and urokinase as adjunctive therapy for treatment of CRBSI. However, this result may be a type 2 error and a larger study is required to assess benefit of this therapy.

1. Gossum V *et al.* (2001) *Clin Nutr* 20 (3): 205–210.