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Chronic cholestasis in patients receiving home parenteral nutrition: prevalence and predisposing factors

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Deranged liver function tests are frequently seen in patients receiving home parenteral nutrition (HPN) and HPN patients are at risk of a range of hepatic complications that may progress to significant and life-threatening liver damage. Chronic cholestasis, defined as 1.5 × upper limit of normal (ULN) of ≥2 of gamma-glutamyl transferase (GGT), alkaline phosphatase (ALP) or bilirubin for >6 months, has been shown to be associated with a 5-fold increase in the incidence of histologically advanced liver disease in HPN patients. The aim of the present study was to investigate prevalence of chronic cholestasis in a large cohort of HPN patients treated at a single Centre and to examine factors influencing its occurrence.

Records of all patients receiving HPN for >6 months at 31 December 2005 were reviewed. Patients receiving parenteral fluids and electrolytes only were excluded. Plasma biochemistry collected over the previous 12 months was reviewed for each patient and chronic cholestasis was defined as above. Logistic regression analysis was employed to identify factors associated with prevalence of chronic cholestasis.

Notes of ninety-eight patients were reviewed. Mean age was 52 (range 19–80) years. Underlying diagnoses were: Crohn's disease 34%; mesenteric infarct 25%; pseudo-obstruction 15%; surgical complications 7%; radiation enteritis 6%; other 13%. Mean duration of HPN was 69 (range 6–284) months. Mean parenteral energy intake was 4.84 (SD 2.18) MJ/d corresponding to 82 (SD 35) % of BMR. Mean parenteral lipid intake, in those receiving lipid, was 0.40 (SD 0.26) g/kg per d. Chronic cholestasis was seen in twenty-seven patients giving a point prevalence of 28%. Univariate analysis suggested increased risk of chronic cholestasis associated with lack of colon in continuity, total parenteral energy and total lipid energy. No association was seen between chronic cholestasis and diagnosis, small bowel length or BMI. In multivariate analysis, presence of colon in continuity was associated with significantly lower prevalence of chronic cholestasis (OR 0.20, $P=0.003$) while total parenteral energy intake was associated with a higher prevalence of chronic cholestasis (OR 3.36 per 41.85 kJ/kg per d increase, $P<0.001$). No association was seen between parenteral lipid intake and chronic cholestasis in multivariate analysis.

Chronic cholestasis is common in patients receiving HPN. Multivariate analysis suggests that high parenteral energy intake and the lack of a colon in continuity with the small intestine are independently associated with an increased risk of chronic cholestasis in these patients.