



ABSTRACT

Nutrition management of intestinal failure: From neonates to the elderly

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Double enterostomies (DES) and necrotising enterocolitis (NEC) are prevalent in neonatal intensive care units (NICU), commonly resulting from surgical removal of diseased intestine. Sarcopenia prevalence is >40% in community dwelling elderly >65 yrs and is associated with poor nutritional status before/after abdominal surgery, with intestinal failure (IF) and high output stoma losses. Parenteral Nutrition (PN) is the standard of care for Type 2 IF patients with DES or enteroatmospheric fistulas (EAF), but risks catheter-related complications, infection, gut and hepatobiliary dysfunction. Chyme reinfusion therapy (CRT) is a recommended distal feeding technique that may minimise these risks.

In 500+ adult IF patients, CRT normalised liver function tests (LFT) with 80-90% patients weaning earlier from PN. Surgical closure in French EAF patients >65 yrs took longer than the younger DES cohort but outcomes were similar. Of 10 NZ patients, 4/5 >65yrs required PN for high output stomas. After performing CRT with the Insides® System 75% PN-dependent patients resumed a full low residue oral diet within 7d. Serum albumin, creatinine, and ALT levels for all >65yrs returned to reference ranges. Stoma losses and antidiarrheal medication use reduced, facilitating discharge.

From a systematic review involving 289 neonates (mean age 32.5 weeks) receiving CRT through a small bowel DES, >60% completely ceased or significantly decreased PN, coupled with weight gain, reduction in postoperative anastomotic leakage and easier reversal operations. Preliminary data with CRT, utilising the Insides® Neo in 10 neonates (7/10 originally on PN), confirmed early enteral autonomy, accelerated weight gain and positive nursing experience.

Conclusion: Chyme reinfusion therapy improves nutrition and liver status of elderly IF patients at risk of sarcopenia. Infants with NEC, experience good growth and outcomes. The new systems offer a 'third way' for nutritional management, across the ages, resulting in more available nursing time for better holistic care to patients.

Keywords: chyme reinfusion, intestinal failure

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