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Postoperative Weaning Strategies from PN Used in European Multidisciplinary IF Rehabilitation Centers: A Report from the ERNICA if Working Group

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Rationale: The first ERNICA IF workshop was held in 2019; several research questions were raised. There is a lack of evidence for the management of weaning of infants with SBS from parenteral nutrition (PN). We picked up weaning strategies from PN used in European multidisciplinary IF rehabilitation centers.

Method: A questionnaire was sent by email to the 24 participating ERNICA centers in 15 European countries and literature reviewed. The part about post-surgery and weaning strategies used for infants with SBS and IF was worked out for this abstract.

Results: The response rate was 100% (24/24 centers). Five of the centers look after > 30 pediatric patients with long-term home PN, 5 centers 20-30, 3 centers 10-20 patients and 11 centers up to 10 patients. All 24 centers introduced EN within 24/48 hrs post-surgery (if clinically possible). Of the 24 centers, bolus feeding (10/24) and continuous feeding (9/24) were used equally or a combination of both in 5 centers. 22 centers used own mothers' milk; with extensively hydrolyzed feed (11) amino acid based feed (5) or donor breast milk (3 centers) as the second choice.

The EN was increased by 10–20ml/kg/day (10), biweekly (3) or according to tolerance (6). Parameters for milk increase were ostomy output (all centers) + gastric residuals (13) and frequency (12) or weight of stool, growth and vomit. 11/24 centers had a protocol for weaning from PN. Tolerance was defined as vomit <3/day (20), stool <5/day (21) or clinical observation (4). Ten centers checked blood citrulline and the majority (19) biochemical markers.

Conclusion: All centers recognized the importance of mother's milk as the initial EN to use, although apart from this, a diversity of post-surgical nutrition strategies was found. Literature review did not provide any conclusive evidence. The working group developed a flow chart to support treating these vulnerable infants in an optimal way.

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Gut Liver Axis in Short Bowel Syndrome

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Introduction: Short Bowel Syndrome (SBS) is a rare condition characterised by a reduced intestinal nutrient absorptency. It represents the main cause of intestinal failure (IF) in pediatric population. SBS patient management is complex and requires a multidisciplinary approach.

The aim of the study was to evaluate levels of blood fatty acid, and the potential contribution of intestinal dysbiosis in aetiology of liver damage in SBS patients

Methods: Patients with SBS who underwent surgery from January 2019 to July 2020 at our institute were enrolled. Intraoperative liver biopsies were analyzed and long (LCFAs), medium (MCFAs), linear short (linear SCFAs) and branched short (branched SCFAs) chain fatty acids blood levels were obtained at surgery.

Results: 11 pediatric patients with SBS were enrolled.

9 patients underwent liver biopsies.

Median age at surgery was 3,7 years (0,3 – 12,5).

7/9 (78%) liver biopsies showed a variable degree of liver damage from periportal fibrosis to biliary cirrhosis.

Blood tests showed 1328,08 µmol/L linear SCFAs (32%), 149,53 µmol/L branched SCFAs (4%), 942,26 µmol/L MCFAs (22%) and 1754,56 µmol/L LCFAs (42%).

Conclusions: Most of the analyzed patients had a variable degree of liver damage.

We observed that the blood level of fatty acids of the patients is decreased, especially long and short chain fatty acids, potentially implicated in aetiology of liver damage in SBS patients.