Abstract / Povzetek predavanja

Inflammatory Bowel Disease as the Leading Cause of Intestinal Failure

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Intestinal failure is defined as the reduction of gut function below the minimum necessary for the absorption of nutrients, water, and electrolytes, such that intravenous supplementation is required to maintain health and/or growth. While a wide range of conditions can result in intestinal failure, inflammatory bowel disease (IBD), particularly Crohn's disease, has emerged as the leading cause in adults across Europe and North America. This development reflects not only the chronic, relapsing nature of IBD but also the cumulative burden of complications, surgical resections, and malnutrition over the disease course. With the rising global prevalence of IBD, the recognition and management of intestinal failure in this population has become a critical clinical challenge.

Recent epidemiological studies demonstrate that Crohn's disease accounts for up to 40–50% of all benign causes of chronic intestinal failure requiring long-term parenteral nutrition in specialized European centers. Ulcerative colitis contributes to a much smaller proportion, typically through surgical complications following colectomy and pouch failure. Advances in surgical and medical management of other causes of intestinal failure, such as mesenteric ischemia, have further shifted the distribution towards IBD as the predominant etiology. The increasing incidence of IBD in newly industrialized regions suggests that this burden is likely to expand globally in coming decades.

The mechanisms by which IBD leads to intestinal failure are multifactorial. Extensive small bowel resection due to stenotic or penetrating Crohn's disease remains the dominant cause, resulting in short bowel syndrome and severe malabsorption. Repeated resections further increase the risk of progressive intestinal insufficiency. In addition, active mucosal inflammation, chronic diarrhea, strictures, and fistulas contribute to nutrients loss and impaired absorption. Intestinal failure may also occur in the absence of major resections, particularly in patients with refractory small bowel disease or complications such as enteric fistulas and abscesses. The cumulative impact of chronic inflammation, surgical burden, and malnutrition explains why IBD stands out compared to other intestinal diseases.

The clinical manifestations of intestinal failure in IBD extend beyond malnutrition. Patients frequently experience dehydration, electrolyte disturbances, renal failure, vitamin and trace element deficiencies, and metabolic bone disease. Dependence on long-term parenteral nutrition (PN) carries risks of central venous catheter infections, intestinal failure liver disease, and reduced quality of life.

The psychosocial burden of intestinal failure is significant, with patients reporting limitations in daily activities, employment, and social participation. For many, intestinal failure represents the most disabling complication of IBD.

Nutritional therapy remains the cornerstone of management. Parenteral nutrition is life-sustaining in patients with short bowel syndrome or severe malabsorption. Optimization of PN protocols, catheter care, and monitoring strategies has significantly improved outcomes, with 5-year survival rates now exceeding 80% in specialized centers. In parallel, innovative medical therapies aimed at reducing intestinal inflammation and preserving bowel length, such as biologics and small molecules, play a critical preventive role. Early initiation of enteral nutrition when feasible supports intestinal adaptation and reduces PN dependency. Multidisciplinary care involving gastroenterologists, surgeons, dietitians, and specialized nursing staff is essential to optimize long-term outcomes.

Ongoing research is directed towards strategies to reduce the risk of intestinal failure in IBD. These include earlier diagnosis and aggressive disease control to minimize surgical resections, regenerative medicine approaches to enhance intestinal adaptation, and development of novel pharmacological therapies that target fibrotic pathways. The integration of patient-reported outcomes and quality-of-life measures into clinical care highlights the need to address not only survival but also the lived experience of patients with intestinal failure.

In Slovenia, the Department of Clinical Nutrition is currently managing 15 patients (age 27–83 years) with Crohn's disease who require Home Parenteral Nutrition (HPN) due to intestinal failure. The cohort includes 5 females and 10 males. The duration of HPN therapy ranges from 1 to 18 years, with 4 patients receiving HPN for more than 10 years. Three patients are being treated with teduglutide, a GLP-2 analogue, which has contributed to a reduction in their HPN volume requirements.

CONCLUSION

IBD, particularly Crohn's disease, has become the leading cause of intestinal failure in adults, surpassing other benign gastrointestinal conditions. This complication is driven by the cumulative effects of chronic inflammation, repeated surgical resections, and malnutrition, all of which significantly impact quality of life and survival. Although advances in parenteral nutrition, multidisciplinary care, and emerging therapies have improved prognosis, prevention through effective disease control and bowel preservation remains critical. In Slovenia, the recognition of IBD as the predominant benign cause of intestinal failure underscores the importance of treatment within specialized intestinal failure units and the ongoing need for targeted research to improve outcomes in this high-risk population.

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