Utilizing Partial Enteral Nutrition and Whole Food Diets in Clinical Care of IBD

Clinical Case Study Series

Featuring:

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TRANSCRIPT

Narrator: Case studies are an excellent way to learn concepts to apply in clinical practice. Welcome to Abbott Nutrition Health Institute's Clinical Case Study Series, helping expand the knowledge of nutrition management in clinical practice through case study presentations.

Today's case study will focus on the nutritional management of a pediatric patient with Crohn's disease using partial enteral nutrition, combined with the Crohn's Disease Exclusion Diet.

Our presenter is Dr. David L Suskind, Professor of Pediatrics in the Division of Gastroenterology at Seattle Children's Hospital, University of Washington.

David Suskind: Nutritional therapy and diet play a central role in Crohn's disease. This case highlights the importance of nutritional therapy in Crohn's disease, specifically the Crohn's Disease Exclusion Diet with partial enteral nutrition.

Partial enteral nutrition has been defined in different ways, but most studies describe it as “providing roughly 50% of daily calories from formula and the other 50% from whole foods.”

Early studies tested partial enteral nutrition alongside a standard Western diet and found that it was significantly less effective than EEN, or exclusive enteral nutrition, in inducing remission and improving laboratory markers.

However, a landmark study demonstrated that when partial enteral nutrition is paired with the Crohn’s Disease Exclusion Diet, it is just as effective as exclusive enteral nutrition in achieving clinical remission and normalizing lab values in Crohn’s disease.

The rationale for combining partial enteral nutrition with the Crohn's Disease Exclusion Diet is clear. It offers the same effectiveness as EEN in inducing remission, but with greater tolerability. By incorporating foods alongside formula, it lessens the psychological and social stigmas associated with an all formula diet. This has been shown in multiple studies.

The Crohn's Disease Exclusion Diet is a structured, three-phase dietary plan. Each phase combines a partial enteral nutrition component, providing between 50% and 25% of total daily calories, with a progressively liberalized whole foods diet.

The approach gradually expands food choices while maintaining anti-inflammatory principles. Here you can see some of the core required foods in the Crohn's Disease Exclusion Diet. This includes chicken breast, eggs, potatoes, bananas and apples, along with the variety of other allowed foods. These foods form the backbone of the diet during the initial phase, providing a balance of easily digestible proteins, carbohydrates, and fats.

The first phase of the CDED is intentionally structured to limit dietary components thought to contribute to intestinal inflammation. This includes certain food additives, emulsifiers, and high-fat processed foods, while ensuring patients still receive adequate nutrition.

The required foods are not only selected for their low inflammatory potential, but also for their high nutrient density, and ease of tolerance for individuals with active Crohn's disease. Over time, additional foods are gradually reintroduced in subsequent phases, allowing for a more varied diet while maintaining control over inflammation.

Here you can see the list of disallowed foods. The exclusion of these foods form a key component of the Crohn's Disease Exclusion Diet. These items are thought to promote intestinal inflammation and include ultra-processed products, foods high in added sugars, and other ingredients linked to worsening gut health.

Now, let me introduce Jude. Jude is a 15-year-old boy who was recently diagnosed with moderate ileocolonic Crohn's disease. His story is not uncommon. He had been experiencing abdominal pain for nearly eight months, alongside unintentional weight loss of almost 5 kgs. Laboratory tests revealed elevated inflammatory markers, and overall, his presentation was consistent with active Crohn's disease. A colonoscopy was done and ultimately confirmed the diagnosis.

When he came time to decide on treatment, Jude's parents wanted to move forward with exclusive enteral nutrition, given its efficacy.

Jude, however, was reluctant to commit to an all-formula therapy. Jude was concerned about the psychological as well as the social impact of exclusive enteral nutrition and wanted to consider other options.

After careful discussion, Jude opted for partial enteral nutrition combined with the Crohn's Disease Exclusion Diet, a strategy that allowed him to pursue remission while still incorporating real foods into his daily life.

After beginning the Crohn's Disease Exclusion Diet combined with partial enteral nutrition, Jude demonstrated encouraging early improvement. During the first three weeks of Phase 1, when roughly half of his calories came from formula and the remainder came from carefully selected, allowed foods, he reported a noticeable reduction in abdominal pain and a return of his appetite. His parents observed that he was more energetic during the day, and sleeping better at night, and overall seemed more like himself. Laboratory testing mirrored these clinical gains, showing a modest decline in inflammatory markers, consistent with an early therapeutic response.

As Jude transitioned into Phase 2 after week six, his diet broadened to include additional fruits, vegetables, and lean proteins. He welcomed the increased variety, which not only made the diet more enjoyable but also supported long-term adherence.

By the close of Phase 2, Jude had regained 2-3 kg, his stool frequency normalized, and his energy continued to improve.

At his eight-week evaluation, Jude achieved clinical remission. He was free of abdominal pain, had a healthy appetite, was steadily gaining weight, and his inflammatory markers showed marked improvement.

By 12 weeks, Jude had advanced to Phase 3 of the Crohn's Disease Exclusion Diet with partial enteral nutrition. Phase 3 represents the most liberal stage of the diet, with a broader variety of allowed foods while continuing to exclude ultra-processed foods and pro-inflammatory food items.

At this point, formula accounted for a smaller proportion of his total calories but remained an important component to ensure nutritional adequacy.

Clinically, Jude remained in remission. He had gained over 4 kgs from his baseline, his growth trajectory normalized, and his inflammatory markers returned to within normal range. His symptoms fully resolved, with normal stooling and no abdominal pain.

These results mirror findings from published studies, where CDED with PEN has induced remission in 70 to 80% of pediatric Crohn's patients at 6 to 12 weeks and maintained remission in many beyond the induction phase.

Importantly, Jude tolerated the long-term regime well. With support from the CDED app and structured food lists, Jude and his family found the diet increasingly manageable. Jude himself reported minimal social disruption and was still able to have meals with peers and adhere to the dietary regime.

This underscores one of the key advantages of the CDED with partial enteral nutrition compared to exclusive enteral nutrition. It has high efficacy in inducing and maintaining remission, and is coupled with improved quality of life and sustainability.

Now, beyond the twelve week mark, Jude continues on the CDED with partial enteral nutrition as his long-term therapy, and remains in clinical remission without the use of corticosteroids or escalation to biologic therapy.

Importantly, Jude's experience underscores a key advantage of partial enteral nutrition combined with the CDED. Unlike exclusive enteral nutrition, which can be socially and psychologically burdensome, this approach allowed Jude to continue eating real foods, preserving a positive relationship with meals and daily life.

Jude's case highlights how dietary therapy can induce clinical remission in pediatric Crohn's disease, while balancing out efficacy as well as quality of life. It is also important to realize, that not every patient will be open to EEN or the Crohn's Disease Exclusion Diet with partial enteral nutrition.

It's our responsibility to meet patients where they are. That said, diet remains an important consideration for all individuals with IBD. Numerous whole-food-based dietary approaches have been used to support the inflammatory processes and improve symptoms. Most of these diets share common principles. They minimize highly-processed or ultra-processed foods, as well as excessive sugars, while emphasizing whole foods.

Interestingly, a study in IBD patients who were otherwise stable on biologic therapy found that those who had adhered most closely to a Mediterranean-style diet had lower markers of inflammation in the stool, as measured by fecal calprotectin. This highlights not only the potential role of diet in disease management but also underscores its broader importance for overall health.

This case highlights the importance of nutritional therapy in Crohn's disease, specifically the Crohn's Disease Exclusion Diet with partial enteral nutrition. That being said, nutrition should be discussed with every patient.

These discussions and the guidance they give should be beyond just general concepts of eating healthy and should be evidence-based. Equally important is removing stigma, so patients and families can feel supported. The focus should be on the benefits, symptom improvement, better nutritional status, and healthy growth while also acknowledging the challenges of sustaining dietary change. Addressing concerns, offering practical tools such as meal planning resources and providing emotional support are key to long-term success.

Ultimately, dietary therapy should be framed as one element of a comprehensive care plan, helping patients understand how nutrition fits alongside other treatments to support durable remission and quality of life.

In closing, dietary therapy, specifically, the Crohn's Disease Exclusion Diet with partial enteral nutrition is not just an adjunctive therapy in pediatric Crohn's disease, but a powerful tool to get your patients into clinical remission and to maintain that remission long term.

By tailoring the approach to each patient’s needs, preferences, and lifestyle, we can achieve clinical remission while preserving quality of life. Success depends on integrating nutrition into the overall treatment plan, providing clear guidance and support, and addressing the social and emotional aspects of dietary change.

As clinicians, our role is to equip patients and families with the knowledge and structure needed to harness the full potential of dietary therapy.