What is the Right Diet for IBD?

Gerard E. Mullin, M.D.
Objectives

- To discuss the role of dietary therapy and counseling for IBD
- To discuss the popular named diets used by IBD patients
- Nutrition management in Pediatrics
- To discuss the appropriate use of nutraceuticals supplements for IBD
Diets for IBD

- No standard IBD diet currently exists
- Several “named” diets having testimonials
  - Elimination Diet
  - Specific Carbohydrate Diet
  - Maker’s Diet
  - Anti-inflammatory Diet
- Limited guidance from professional societies plenty of divergent information on the internet
# Named Diets for IBD

<table>
<thead>
<tr>
<th>Diet</th>
<th>Rationale</th>
<th>Plan</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Carbohydrate</td>
<td>Eliminate poorly digestible CHO’s to limit fermentation in small bowel.</td>
<td>Allowed: meat, fish, eggs, vegetables, nuts, low-sugar fruits</td>
<td>none</td>
</tr>
<tr>
<td>Diet</td>
<td>Avoid Complex carbohydrates</td>
<td>Avoid: starches, grains, pasta, legumes, and breads</td>
<td></td>
</tr>
<tr>
<td>Maker’s Diet</td>
<td>40 day diet and lifestyle regimen based upon “biblical principles”</td>
<td>“clean” non-processed diet, lifestyle, spiritual, mental, emotional</td>
<td>none</td>
</tr>
<tr>
<td>Anti-inflammatory Diet</td>
<td>Provide foods rich in flavonoids and phytonutrients</td>
<td>Avoid red meat, dairy-favor vegetables, fish, olive oil, walnuts, etc.</td>
<td>none</td>
</tr>
</tbody>
</table>

General IBD guidelines from the American Dietetic Association.

- Eat small meals or snacks every 3 or 4 hours.
- Use **low fiber foods** when you have symptoms. You can slowly reintroduce small amounts of whole grain foods and higher-fiber fruits and vegetables one at a time when symptoms improve.
- Drink enough fluids (at least 8 cups each day) to avoid dehydration.
- Eat foods with added probiotics and prebiotics.
- Use a multivitamin.
- During periods when you don’t have symptoms, include whole grains and a variety of fruits and vegetables in your eating plan. Start new foods one at a time, in small amounts.

Dietary Guidelines for IBD

- No special diet has been proven to be effective for preventing or treating CD symptoms or inflammation.

During disease activity:
- Decrease fiber consumption especially whole-grain products, bran, beans, brown rice, wild rice, nuts, corn, corn hulls, popcorn, seeds, raw fruits and certain vegetables (prunes, corn, raw greens, cabbage and brassica family).
- During recovery period (no symptoms), slowly reintroduce high-fiber foods one at a time in small amounts. Those with blocked intestines may need to avoid raw fruits and vegetables.

- Maintain dairy products unless intolerance develops.

- Enteral nutrition should be used as an adjunct to medical therapy in those who are unable to maintain their nutrition status through oral intake.
Minimal Lactose Diet

Foods Allowed
Reduced lactose milk
Yogurt
Soya milk
Butter, some margarines
Double Cream cheese
Minimal Lactose Diet cont.

Foods to Avoid
Milk
Ice cream
Margarine (need to check ingredients)
Cream (except double cream)
Cottage cheese, processed cheese and cheese spreads
Malted milk drinks and drinking chocolate
Milk chocolate, fudge, toffee
Check ingredients for lactose, milk, milk powder etc.
Healthy Diet for IBD

- Keep up with energy needs seek medical attention if you lose >5% of body weight in 6 weeks or 10% body weight in 6 months.
- Eat a well-balanced diet-avoid being overly restrictive.
- For Crohn’s Disease
  - Lactose and fructose intolerance is frequent with small bowel Crohn’s Disease.
  - Low fiber diet for stricturing and obstructive disease.
  - For food intolerances consider seeking nutritional counseling for a supervised elimination diet.
- Ulcerative colitis-no specific dietary recommendations.
Sources of Fructose
Nutrition Support

Oral Diet
Oral Supplements

Specialized Nutrition Support

Enteral Nutrition
Parenteral Nutrition
Liquid Diets

- Elemental/Semi-Elemental (hydrolyzed)
  - Predigested into amino acids-dipeptides, non-lactose simple sugars (monosaccharides), readily absorbable fats (medium-chain triglycerides)

- Polymeric (intact nutrients)
  - Glucose polymers, long chain fats, proteins
  - More palatable than elemental, semi-elemental
  - Stimulate growth and healing of gut

- Tube Feeds
  - Polymeric formulations delivered though a tube into the gut
Enteral Nutrition (Liquid Diet) Mechanisms of Action?

- Fat Composition
- Bowel Rest
- Antigenic Load
- Glutamine
- Gut Flora
- Gut Permeability
Typical Candidate Patient for EN (Liquid Diet) Therapy

- Child with malnutrition
- Child with growth failure
- Child with small bowel involvement
- Colonic disease
- Child with intolerable corticosteroid side effects
EN for Treatment of Active CD

- In adults, not as efficacious as corticosteroids in inducing remission; better outcomes in children
- EN should be given 6-10 weeks exclusively (oral up to 600 Kcal/D)
- May require nasogastric tube for administration
- Benefits include corticosteroid sparing and promotion of growth in children
### ROLE OF NUTRITION SUPPORT IN CD

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>GOAL</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enteral (Liquid diet)</td>
<td>Primary Tx Mainly Pediatric</td>
<td>Remission-recurrence with oral diet</td>
</tr>
<tr>
<td></td>
<td>Reversal of Growth Failure</td>
<td>Achieves growth in children and adolescents</td>
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## ROLE OF TPN IN CD

<table>
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<tr>
<th>ROUTE</th>
<th>GOAL</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenteral</td>
<td>Short Bowel Syndrome</td>
<td>Intolerance-malabsorption of enteral nutrition</td>
</tr>
<tr>
<td></td>
<td>Fistula closure</td>
<td>Remission-recurrence with enteral nutrition</td>
</tr>
<tr>
<td></td>
<td>Preoperative Rehabilitation</td>
<td>Corrects malnutrition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decreases complications in severely malnourished</td>
</tr>
<tr>
<td></td>
<td>Reversal of Growth Failure</td>
<td>Achieves growth in children and adolescents intolerant to enteral nutr.</td>
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- **Route**: Parenteral
- **Goal**: Short Bowel Syndrome, Fistula closure, Preoperative Rehabilitation, Reversal of Growth Failure
- **Outcome**: Intolerance-malabsorption of enteral nutrition, Remission-recurrence with enteral nutrition, Corrects malnutrition, Decreases complications in severely malnourished, Achieves growth in children and adolescents intolerant to enteral nutr.
Effectiveness of Nutritional Support for Crohn’s Disease

Enteral > Placebo
Enteral < GCS
Enteral = TPN
Polymeric = Elemental
# Malnutrition in IBD

<table>
<thead>
<tr>
<th>Deficiency</th>
<th>CD</th>
<th>UC</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Negative nitrogen balance</td>
<td>69%</td>
<td>Unknown</td>
<td>Adequate energy and protein</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>48%</td>
<td>5%</td>
<td>1000 mcg/d x 7 d then Q mo</td>
</tr>
<tr>
<td>*Folate</td>
<td>67%</td>
<td>30-40%</td>
<td>1 mg/d</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>11%</td>
<td>Unknown</td>
<td>5,000-25,000 IU/d</td>
</tr>
<tr>
<td>*Vitamin D</td>
<td>75%</td>
<td>35%</td>
<td>5,000-25,000 IU/d</td>
</tr>
<tr>
<td>Calcium</td>
<td>13%</td>
<td>Unknown</td>
<td>1,000-1,200 mg/D</td>
</tr>
<tr>
<td>Potassium</td>
<td>5-20%</td>
<td>Unknown</td>
<td>Variable</td>
</tr>
<tr>
<td>Iron</td>
<td>39%</td>
<td>81%</td>
<td>Fe Gluconate 300 mg TID</td>
</tr>
<tr>
<td>Zinc</td>
<td>50%</td>
<td>Unknown</td>
<td>Zn Sulfate 220 mg daily or BID</td>
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Vitamin Supplements for IBD

Patients with CD and UC tend to have vitamin and mineral deficiencies (B12, folate, vitamin D, zinc, calcium, iron).
Consider a multivitamin multiminerual supplement
Take calcium-vitamin D supplement as per DRI (1200 mg calcium 400 IU vitamin D)
Be wary of taking mega-doses of vitamins to control disease!
Danger of Megadosing Supplements

- Vitamin A toxicity - cirrhosis, bone pain
- Vitamin E - bleeding, diarrhea, cramping
- Fish Oil - bleeding tendency
- Zinc - copper deficiency
- Vitamin D - kidney stones
- B vitamins
  - B1 (thiamine) cardiac arrhythmias
  - B3 (niacin) flushing
  - B6 (pyridoxine) peripheral neuropathy
## Nutraceutical Supplements for IBD

<table>
<thead>
<tr>
<th>Modality</th>
<th>Dose</th>
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<tr>
<td>Omega-3 fatty acids</td>
<td>3-4000 mg/D</td>
</tr>
<tr>
<td>Boswelia</td>
<td>350 mg 3x/D</td>
</tr>
<tr>
<td>Curcumin</td>
<td>1000 mg 2X/D</td>
</tr>
<tr>
<td>Probiotics</td>
<td>30 billion CFU/D</td>
</tr>
<tr>
<td>Prebiotics</td>
<td>varies</td>
</tr>
<tr>
<td>Butyrate enemas</td>
<td>60-100 mL 60-80 microM/L</td>
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If in Doubt Seek a Qualified Nutritionist for Advice
Conclusions

- Lack of expert consensus on diet for IBD
- Enteral nutrition may induce remission and maintain growth curve in children
- TPN—mainly for perioperative malnourished, fistula, short gut syndrome
- Probiotics, SCFA enemas and Curcumin may be useful adjuncts for UC
- Fish oils may help maintain CD
- Supplements are adjuncts not substitutes for medical Tx for IBD
QUESTIONS?