Combining Therapies For Optimal Results

Complementary, Alternative, and Integrative Care for Inflammatory Bowel Disease

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Webinar participants are discouraged from applying the information in this presentation without medical supervision by a licensed physician. While we urge you to integrate complementary and alternative modalities into treatment, we maintain the importance of continuing a relationship with gastroenterological care that may be required to maintain disease control, mucosal healing, and remission.
Treatment Decisions

Conventional Medical Plan OR Alternative Medical Plan
Treatment Decisions

Conventional Medical Plan OR Alternative Medical Plan
Integration

“Combining parts so that they work together, or form a whole...”
Treatment Goals Unique to Integrative Care

- Integrate *alternative and complementary methods* to heal intestines and the body in general.

- Integrate *alternative and complementary methods* to stimulate a higher degree of self-regulation and remission.
Integrative Approach

- Integrate different perspectives into one treatment plan
- Treat the “whole” patient
- Combine complementary and alternative methods with conventional treatment for best outcome
Integrative Approach

- In addition to drug therapies and surgery, we thus consider:
  - Dietary Therapy
  - Nutritional Supplementation
  - Hormonal Augmentation
  - Chinese Medicine (acupuncture) and herbal therapy
  - Nutritional I.V. therapy
  - Other therapies to stimulate the body’s ability to heal and self-regulate

- Low Dose Naltrexone
- Fecal Transplant
- Neural Therapy
- Homeopathy
- Other therapies
Integrative Approach

- Apply multiple therapies, then observe the outcome of patient, adjusting the therapies accordingly.
- Maintain awareness of patient’s clinical responses.
- Work with gastroenterologists and other medical providers to taper medications when improvement, or add certain medications when condition flares.
Integrative Approach

- Allows patients to set goals for treatment and construct a “plan” or “program”
What Do You Want?
“Combining parts so that they work together, or form a whole…”

Conventional Medical Plan

Alternative or Complementary Medical Plan
Integration

"Combining parts so that they work together, or form a whole…"

Conventional Medical Plan

Alternative or Complementary Medical Plan

XXXX
“Combining parts so that they work together, or form a whole…”
Cases
Case #1 “Lauchlan”

- Presented for Naturopathic care in 2008
- Diagnosed with CD, considerable small bowel and esophageal pathology
- Began in 2003 with joint pains in legs
- By 2005, there was weight loss, appetite problems, concern with affect, anal fissures
2006 upper GI endoscopy and small bowel study revealed mild to moderate ileocolonic CD with rectal sparing → started Prednisone 60mg and Azathioprine 150mg

Also attempted gluten-free diet and various supplements with poor compliance

Same year, second opinion involved recommendation of different meds
“Lauchlan”

- 2006-7: continued drug trial with 4 rounds of Prednisone, Asacol, Entrocort, Azathioprine, Anucort, Immodium, Remicade infusions

- Unresponsive to all medications except high dose steroids

- Same time, onset of depression (from poor nutrition and lack of exercise) → started psychological counseling
“Lauchlan”

- Stopped growing and gaining weight; weighed 74 pounds, same weight as 1 year earlier.
- Unresponsive to all medications except high dose steroids.
- Dexascan revealed “osteopenia”.
- Continued high inflammation markers (ESR, CRP, etc.).
“Lauchlan”

- Tapering off of prednisone revealed symptoms:
  - Diarrhea
  - Vomiting
  - Abdominal pain and cramping
  - Emotional meltdowns
  - Difficulty drinking

What is to be done?
“Lauchlan”

- April 17, 2007: Introduction of Specific Carbohydrate Diet

- Designed to restrict the carbohydrates available to intestinal bacteria, helping correct bacterial overgrowth related to mucus and toxin production

- Designed to improve nutritional status and immune function
“Lauchlan”

- Excellent response in 5 days: normal BM’s, 1-2x day
- By June 2007, able to taper off steroids without relapse, all inflammation markers down
- By September 2007, no flares for 6 months.
- Gaining weight, normal BM’s, restored energy

This is a common response in our IBD complementary and alternative care program. A dietary strategy is often the initiator of long-lasting remission. Sometimes it works alone, sometimes in combination with other therapies.
Specific Carbohydrate Diet

- **Foods to Eat**
  - Fresh or frozen vegetables and legumes
  - Fresh, raw, or dried fruits
  - Fresh or frozen meats, poultry, fish, eggs
  - Natural cheeses, homemade yogurt, dry curd, cheese
Specific Carbohydrate Diet

- Foods to Avoid
  - Canned vegetables, fruits
  - All cereal grains, including flour
  - Potatoes, yams, parsnips, chickpeas, bean sprouts, soybeans, mung beans, fava beans, seaweed
  - Processed meats, breaded or canned fish, processed cheeses, smoked or canned meats
Specific Carbohydrate Diet

- **Foods to Avoid**
  - Buttermilk or acidophilus milk, commercially prepared sour cream, soymilk, instant tea, or coffee
  - Corn starch, arrowroot or other starches, chocolate or carob, bouillon cubes or instant soup, all products made with refined sugar, agar agar, carrageenan, or pectin, ketchup, ice cream, molasses, corn, or maple syrup, flours made from legumes, baking powder, medication containing sugar, all seeds
Sample Day’s Menu

- **Breakfast**: Baked apple sweetened with honey and flavored with cinnamon; scrambled eggs; homemade nut muffin with butter and homemade jam; weak tea, coffee, grape juice or apple cider

- **Lunch**: Tuna fish salad made with homemade mayonnaise, garnished with olives, dill pickle on a bed of lettuce; slices of cheddar cheese; homemade pumpkin pie

- **Dinner**: Homemade spaghetti sauce made with ground beef, onions, garlic, herbs, tomato juice served on bed of beans or spaghetti squash; freshly grated cabbage salad with homemade mayonnaise or oil and vinegar; peas and carrots with butter; fresh fruit or cheese cake; tea
Implementing the dietary strategy means finding the foods that are “safe,” that “downregulate” autoimmune reactions, that do not “upregulate” inflammation and mucosal ulceration, that appear to correct dysbiosis when it exists, and that creates an environment in which the gut can heal.

This takes a focused effort, time, and guidance.
Diet matters
There are many studies in small cohorts of patients that claim that intake of certain diet constituents like fat, refined sugar, fruits, vegetables and fiber affect the expression of IBD. These are often compromised by insufficient data or methodological limitations and do not provide unequivocal evidence to incriminate any particular dietary factor. Among various dietary interventions, none has shown striking efficacy with the possible exception of complete enteral nutrition...
Role of dietary habits on IBD far from being well established. Food intolerances very frequent, but usually inconsistent among IBD patients, and therefore no general dietary recommendations can be made in these patients.
The recent studies highlighting the impact of diet on the gut microbiome provide a strong rationale for further investigation of the link between diet, the gut microbiome, and the development of IBD. Such studies may provide novel information about disease pathogenesis as well as identify new therapeutic alternatives for patients suffering from IBD.
Research – Diet & Nutrition

- University of Massachusetts Pilot Study, 2012
- Used “Anti-Inflammatory Diet (IBD-AID) derived and augmented from The Specific Carbohydrate Diet (SCD).”
- Study objective: To assess the efficacy and feasibility of the IBD-AID as an intervention in treatment of IBD
- Intervention: Patients were recruited from UMMHC gastroenterology clinic upon referral of gastroenterologist. They received individual instruction of the diet and its restrictions through 5 individual nutrition sessions over 6-10 month period. Support materials were provided. Cooking classes were available to patients.
Study Conclusion: The case series indicates the potential for the IBD-AID to be used as an adjunctive or alternative therapy for treatment. Notably, 9 out of 11 patients were able to be managed without anti-TNF therapy, and 100% of patients had symptoms reduced. To make clear recommendations for its use in clinical practice, randomized trials are needed alongside strategies to improve acceptability and compliance with the IBD-AID.

“Lauchlan”

Because of overwhelming evidence from case after case, implementation of a dietary strategy should be a key intervention and remains at the heart of Pearl Natural Health’s IBD Complementary and Alternative Medicine Program.
Lauchlan

- December 11, 2007: 6 months off steroids without flare. Still on 150mg Azathioprine

January 2008: sudden fever, diarrhea, decreased energy. Had been on plan for 9 months (presents at Pearl Natural Health for care)

What happened?
“Lauchlan”

- Although he was eating 100% SCD diet at home, Lauchlan reveals eating off diet outside the home.
- In response, high dose steroids were re-started.
- Lauchlan was back in a relapse.
Choice:

A. Try New drug, Humira along with current regimen; rely completely on conventional care.

OR

B. Commit to SCD and Integrative Treatment plan.
Evaluation

- Adrenal Assessment
- Digestive Function and Microbial Analysis
- Intestinal Permeability
- Nutritional and Metabolic Analysis
<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Result</th>
<th>Ref Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASI</td>
<td>Adrenal Stress Index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAP</td>
<td>Free Cortisol Rhythm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>07:00 - 08:00 AM</td>
<td>4</td>
<td>Depressed</td>
</tr>
<tr>
<td></td>
<td>11:00 - Noon</td>
<td>1*</td>
<td>Depressed</td>
</tr>
<tr>
<td></td>
<td>04:00 - 05:00 PM</td>
<td>&lt;1*</td>
<td>Depressed</td>
</tr>
<tr>
<td></td>
<td>11:00 - Midnight</td>
<td>1</td>
<td>Normal</td>
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</tbody>
</table>

*Cortisol Burden:* 7 23 - 42

The cortisol burden reflects the area under the cortisol curve. This is an indicator of overall cortisol exposure, where high values favor a catabolic state, and low values are sign of adrenal deterioration.

*Further investigation is warranted*

*Figure 2.*

The Cortisol release inducers fall into 4 broad categories shown in the adjacent flowchart. Long term adrenal axis maintenance and restoration, require optimization of all the cortisol inducers.

*Remarks:* Depressed morning cortisol, < 13 nM, is suggestive of marginal HPA (Hypothalamic-Pituitary-Adrenal) performance. Normal rhythms exhibit highest cortisol value for the day at 7 - 8 AM.
DHEAS as a marker for inflammation was low in CD and UC. In CD, low DHEAS and high CORTISOL serum levels were associated with higher humoral inflammatory activity.

With respect to humoral inflammatory activity in CD, DHEAS and cortisol seem to be inversely regulated, which may have an impact on several immune functions, such as IL-6 secretion.

Intestinal Permeability

Lactulose Percent Recovery
Ref Range %
<= 1.50

Mannitol Percent Recovery
Ref Range %
4 27

Lactulose/Mannitol Ratio
Ref Range
<= 0.10

Commentary

This test has been developed and its performance characteristics determined by Genova Diagnostics, Inc. and has been cleared or approved by the U.S. Food and Drug Administration.

The **Reference Range** is a statistical interval representing 95% or 2 Standard Deviations (2 S.D.) of the population.
Intestinal permeability appears related to disease activity in UC and CD.

World J Gastroenterol. 2011 May 7; 17(17): 2211-2215; Published online 2011 May 7 10.3748/wjg.v17.i17. PMCID: PMC3092873
Small intestine permeability is a useful predictor of relapse in patients with small intestinal CD
<table>
<thead>
<tr>
<th>GP2</th>
<th>Ova &amp; Parasites, x3 (Stool)</th>
<th>No Ova or Parasites Seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP3</td>
<td>Bacterial Stool Cu.</td>
<td>Abundant mixed Gram negative rods/flora.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abundant mixed Gram positive rods/flora.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pathogens/Bacterial Overgrowth Detected:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beta Hemolytic Streptococcus - Neither group A or B - Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alpha Hemolytic Streptococcus - Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gamma Hemolytic Streptococcus - Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Findings:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non pathogenic E. coli - Abundant</td>
</tr>
</tbody>
</table>

In general, early disturbances in microfloral balance may be reflected in the non expected and selective overgrowth of microbial species that are usually non dominant.

Please note: As of February 2005, GP3 report has been made more comprehensive to reflect all observed findings + isolates.
GP3 test performed by Lab.Corp. of America, Seattle WA or PPL Lab., Lynnwood WA.

<table>
<thead>
<tr>
<th>GP3CD</th>
<th>C. Difficile: Toxins A &amp; B (Stool)</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Testing Toxins A+B yields 99% sensitivity; single toxin test yields 83%.</td>
<td></td>
</tr>
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</table>
Dysbiosis

- Gut Microbes. 2012 Nov-Dec;3(6):544-55. doi: 10.4161/gmic.22156, Role of commensal gut bacteria in inflammatory bowel diseases: Abberant immune responses toward commensal gut bacteria can result in the onset and perpetuation of inflammatory bowel diseases (IBD). Reduced microbiota diversity in conjunction with lower proportion of Gram positive and higher proportion of Gram negative bacteria than in healthy subjects is frequently reported in IBD patients.
In a subset of IBD patients, E. coli strains with specific features trigger disease. Important molecular mechanisms underlying this effect have been identified. However, in the majority of patients the exact nature of host-microbe interactions that contribute to IBD development has so far not been defined. The application of metagenomic techniques may help to identify bacterial functions that are involved in the aggravation or alleviation of IBD...
The intestinal microflora, as a whole, serves important functions in metabolism, intestinal epithelial cell function, and health, immunity and inflammatory signaling.

Microbial composition in IBD patients with ulcerative colitis or Crohn’s Disease as compared to unaffected individuals has been studied and shows decreased diversity.
This altered microflora may have significant implications, with as yet incompletely understood effect.
Research – Probiotics

- For IBD therapy, treatment with different strains of probiotics have shown varied results.
- Small trials have shown promise for probiotic use in the induction and maintenance of remission of UC.
- VSL#3 has been shown to be a safe and effective treatment for acute mild to moderately active UC.
- Patients with mild to moderate UC unresponsive to conventional therapy achieved a combined induction remission/response rate of 77% with treatment of VSL#3.
E. coli Nissle 1917 was found to be effective and equivalent to mesalazine in maintaining remission in UC.

Lactobacillus rhamnosus GG (LGG) was equivalent to mesalazine in the maintenance of remission in UC, however, appeared to be more effective in prolonging the relapse-free time.

Evidence also exists for the role of probiotics in prophylaxis of pouchitis after surgery in UC patients as well as induction of remission in chronic pouchitis.
- Studies of probiotic use in induction and maintenance of remission and prevention of postoperative recurrence in CD have been less consistent than those for UC.

- Small study of LGG for the prevention and recurrence after surgery in CD did not show any improvement over placebo, however Saccharomyces boulardii appears useful in maintaining remission in CD.

- The progress in the use of probiotics for IBD has been well reviewed, however there remains a relative lack of well designed, large, randomized placebo-controlled trials.
The individual diversity of intestinal microflora underscores the difficulty of identifying the entire human microbiota and poses barriers to this field of research.
Lauchlan’s Integrative Treatment Plan

**Dietary:** Specific Carbohydrate Diet – dedicated compliance

**Endocrine:** desiccated adrenal extract, after adrenal study revealed sub-optimal cortisol

**Nutritional:** Treatment of iron deficiency anemia with “transdermal iron,” dysbiosis with probiotics, and intestinal permeability with glutamine; correct hypocalcemia with supplementation

**Conventional Medical:** Finish steroids and taper, continue Azathioprine
“Lauchlan”

- October 2008: one month off steroids without flares
- November 2008: visit to gastroenterologist yielded disbelief at recovery; Lauchlan took trip to Palm Desert, Ca., began wrestling
- December 2008: obtained support from endocrinologist to get support for growth of bones and immune system. Diagnosis 14 y.o. with bone age of 12 1/2
Case #1 “Lauchlan” 13 y.o. boy

- December 2009. 5'51/4", 103 pounds
- January 2009: 2 months off Azathioprine, no flares. 107 pounds
- August 2010: Two years on plan, no flares
Case #1 “Lauchlan” 13 y.o. boy

Ongoing treatment plan components:

**Dietary:** Adherence to Specific Carbohydrate Diet (SCD)

**Endocrinologic:** Continued treatment of adrenal insufficiency until normal adrenal function recovered

**Nutritional:** nutritional supplementation as indicated by laboratory
Case #1 “Lauchlan”

- Periodic follow-ups revealed improving adrenal status, dysbiosis, and nutritional status.

Hey Dr. Weiner, Just to let you know I’m doing awesome, still managing my Crohn’s with diet alone and your guidance. It’s been over 21/2 years and no flares! I am rowing…working out two hours a day, long boarding, and running a 7.5 minute mile. I’m in my junior year…maintaining honor roll, and looking forward to my second year as a Leader in training for CCFA’s Camp Coleman this summer. Life is sweet!”

NOTE FROM SEPTEMBER 2011
Case #1 “Lauchlan”

PROGNOSIS?

“In three words I can sum up everything I've learned about life: it goes on.”

Robert Frost
The influence of stress on the clinical course of a number of intestinal diseases is increasingly being recognized, but the underlying mechanisms are largely unknown… Experiments using animal models demonstrate that various types of psychological and physical stress induce dysfunction of the intestinal barrier, resulting in enhanced uptake of potentially noxious material (e.g., antigens, toxins, and other proinflammatory molecules) from the gut lumen…

From THEME, |Stress and the Gastrointestinal Tract II, Stress and intestinal barrier function, Johan D. Söderholm and Mary H. Perdue -Author Affiliations |Intestinal Disease Research Program, Department of Pathology and Molecular Medicine, McMaster University, Hamilton, Ontario, Canada L8N 3Z5
Case #1 “Lauchlan”

- Flare 5/10/11

- Symptoms: constant, frequent diarrhea, abdominal pain, no reports of macroscopic blood, ulcerative, suppurating lesion 1.5cm x .5cm on hard palate + small lesion lower lip, unable to eat due to mouth pain, dehydration, debilitating fatigue
Integrative Response to Flare

1. Nutritional I.V. treatments: multi-vitamin, mineral, and amino acids, glutathione

2. Return to SCD “basic diet”

3. Topical misoprostol, diphenhydramine, tetracycline for oral lesions

4. Bioidentical hydrocortisone 15mg, DHEA 10mg, Pregnenalone 10mg in compound cap 3x daily

5. Treatment of anemia with transdermal iron

6. Treatment of pain: Tylenol #3 1-2 caps every 4-6 hours
5/25/11:
- Able to stop taper low-dose bioidentical steroids within 4 weeks
- Able to resume normal “SCD” eating
- Return to remitted, unmedicated state
- Good energy, excellent health, full athletic and academic schedule
“Lauchlan”

“I look forward... to graduating (high school) in 2012, and going on to try my hand at college. My Crohn’s is in remission, life is full steam ahead, and couldn’t be cooler!”
“Lauchlan”

- Added Low Dose Naltrexone 9/2012
- Appeared to allow broadening of diet without flare
Research - Low Dose Naltrexone

- A Phase II placebo-controlled clinical trial of LDN for Crohn’s disease at Penn State University

- 2007: MindBrain Consortium of Akron Ohio, study on affective changes in MS treated with LDN

- An Animal research study at Penn Tate of naltrexone in a model of a disease that mimics MS, under a small grant from the National MS Society

- Animal research on neurodegeneration at NIEHS, suggesting a protective role for naltrexone

www.lowdosenaltrexone.org
Research – Low Dose Naltrexone

- **Background:** Endogenous opioid peptides have been shown to play a role in the development and perpetuation of inflammation. *We hypothesize that endogenous opioid system is involved in inflammatory bowel disease, and antagonism of the opioid-opioid receptor will lead to reversal of inflammation.*

- **Aims:** A randomized double-blind placebo-controlled study was designed to test the efficacy and safety of an opioid antagonist for 12 weeks in adults with active Crohn’s disease.
Methods: Forty subjects with active CD were enrolled. Randomized patients received daily oral administration of 4.5mg naltrexone or placebo. Providers and patients were masked to treatment assignment. The primary outcome was the proportion of subjects in each arm with a 70-point decline in Crohn’s Disease Activity Index score (CDAI). The secondary outcome included mucosal healing based upon colonoscopy, appearance, and histology.
Results: Eighty-eight percent of those treated with naltrexone had at least a 70-point decline in CDAI scores compared to 40% of placebo-treated patients (p=0.009). After 12 weeks, 78% of the subjects treated with naltrexone exhibited an endoscopic response as indicated by a 5-point decline in the Crohn’s disease endoscopy index severity score (CDEIS) from baseline compared to 28% response in placebo-treated controls (p=0.008), and 33% achieved remission with a CDEIS score <6, whereas only 8% of those on placebo showed the same change. Fatigue was the only side effect reported that was significantly greater in subjects receiving placebo.
Conclusions: Naltrexone improved clinical and inflammatory activity of subjects with moderate to severe Crohn’s disease compared to placebo-treated controls. Strategies to alter the endogenous opioid system provide promise for the treatment of Crohn’s disease.

Smith JP, Bingaman SI, Ruggiero F, Mauger DT, Mukherjee A, McGovern CO, Zagon IS. Department of Medicine, The Pennsylvania State University, College of Medicine H-045, “Thereapy with Opioid Antagonist Naltrexone Promotes Mucosal Healing In Active Crohn’s Disease: A Randomized Placebo-Controlled Trial” Dig Dis Sci. 2011 Mar 8
Case #2 “Nurse Shelia”
11/10/2011
Case #2 “Nurse Shelia”

- 42 year old female oncology nurse, 1 ½ years after graduating from nursing school
- She had been under tremendous stress, with husband unemployed
- Symptoms: 12 liquid stools daily, tremendous abdominal pain
<table>
<thead>
<tr>
<th>Case #2 “Nurse Shelia”</th>
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<tbody>
<tr>
<td>Diagnosed and managed in conventional gastroenterology setting with multi-medications including Mesalamine, Cimzia, Hyosymine sulfate, Methotrexate, and requiring daily Vicodin for pain.</td>
</tr>
</tbody>
</table>
Case #2 “Nurse Shelia”

- Baseline symptoms, on medication:
  - Constant abdominal pain 3/1-10, with cramping, 5/1-10 in am on waking, increased pain after all meals
  - Bowel urgency
- Lower back pain
- Chronic fatigue
- Coldness
- Insomnia
- Palpitations
- Chronic headaches
Case #2 “Nurse Shelia”

- Had tried many dietary regimens, including SCD
- Trying to eat a “healthy diet,” including non-dairy, grain milks, recent trial of “grain free” eating
Case #2 “Nurse Shelia”

- Pearl Natural Health Evaluation:
  - Dysbiosis: Yeast, pathogenic bacteria (H. Pylori), parasitism
  - Multiple stress factors
  - Multiple nutritional insufficiencies
  - Dairy allergy
  - Low adrenal DHEA, low hydrocortisone precursors (17-OH Progesterone)
Case #2 “Nurse Shelia”

- Integrative plan
  - Re-start SCD “Basic Diet” trial with proper supervision
- Acupuncture twice weekly
- Nutrient support: intravenous infusions of vitamins, minerals, and amino acids
- Stress reduction
- No change in medications
2006 study: Scandanavian Journal of Gastroenterology, randomized study with 29 patients with mild-moderately severe UC.

Conclusion: Acupuncture, whether traditional or sham, improves disease activity as determined by CAI, quality of life and general well-being of patients with UC. TCM acupuncture was significantly superior to sham acupuncture only with regard to disease activity but not to secondary outcome measures.
Adv Clin Exp Med. 2012 Jan-Feb;21(1):5-11: The influence of deficiencies of essential trace elements and vitamins on the course of Crohn's disease. In patients with Crohn's Disease (CD), malnutrition is frequently observed and is an important complication, frequently associated with nutritional deficiencies, especially vitamins (both water- and fat-soluble) and essential trace elements. It is often a result of the disease activity, poor oral intake and/or restrictive diets.
# Nutritional Deficiencies

<table>
<thead>
<tr>
<th>Deficiency</th>
<th>Prevalence (%)</th>
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<tbody>
<tr>
<td>Hypoalbuminemia</td>
<td>25-80</td>
</tr>
<tr>
<td>Anemia</td>
<td>60-80</td>
</tr>
<tr>
<td>Iron deficiency</td>
<td>40</td>
</tr>
<tr>
<td>Low serum vitamin B12</td>
<td>48</td>
</tr>
<tr>
<td>Low serum folate</td>
<td>54-64</td>
</tr>
<tr>
<td>Low serum magnesium</td>
<td>14-33</td>
</tr>
<tr>
<td>Low serum potassium</td>
<td>6-20</td>
</tr>
<tr>
<td>Low serum retinol</td>
<td>21</td>
</tr>
<tr>
<td>Low serum ascorbate</td>
<td>12</td>
</tr>
<tr>
<td>Low serum 25-OH-vitamin D</td>
<td>25-65</td>
</tr>
<tr>
<td>Low serum zinc</td>
<td>40-50</td>
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# Causes of Malnutrition in IBD

- **Decreased oral intake:**
  - Disease induced (pain, diarrhea, nausea, anorexia)
  - Iatrogenic (restrictive diets without supplementation)

- **Malabsorption:**
  - Decreased absorptive surface (due to disease or resection)
  - Bile salt deficiency after resection
  - Bacterial overgrowth
  - Drugs (corticosteroids, sulfasalazine, cholestyramine)
Causes of Malnutrition in IBD

- Increased secretion and nutrient loss
  - Protein-losing enteropathy
  - Electrolyte, mineral, and trace mineral loss in diarrhea

- Increased utilization and increased requirements
  - Inflammation, fever, infection
  - Increased intestinal cell turnover
Adv Clin Exp Med. 2012 Jan-Feb;21(1):5-11: “Nutrition plays an important role in disease management and helps to maintain remission... Deficiencies occur in patients with active... disease, and also in those in remission. Specific supplementation of vitamins and micro- and macronutrients might be helpful or even necessary to maintain remission...
Research – Clinical Nutrition

Treatment Plan

SCD
Acupuncture
Nutritional IV
Stress Reduction
Follow-up 11/29/2011:

- Reports “no pain” and cannot believe how good she feels. Still has a little pain when laying on the right side. The improvement began within 3 days.
Case #2 "Nurse Shelia"

- Follow-up 12/6/2011:
  - Reports “very little pain” and has started to expand in the SCD, adding vegetables. She claims she has needed no vicodin or other pain medication during the interval.
  - She feels “great” but feels like she has a strep throat (we test her, culture negative).
Case #2 “Nurse Shelia”

- Follow-up 12/15/2011:
  - Reports “complete absence” of pain, and reporting normal stools
  - She has discontinued all pain meds.
  - Her headaches have disappeared.
  - She is less tired, and is starting to feel something like “good energy”
Case #2 “Nurse Shelia”

- Follow-up 12/21/2011:
  - Continued absence of abdominal pain
  - “Fatigue” is no longer a problem
  - She is able to eat brussels sprouts without pain, which is amazing to her
  - She has stopped her mesalomine
Case #2  “Nurse Shelia”

- Follow-up 1/19/2012:
  - Maintained complete freedom from abdominal pain, headaches, insomnia, abnormal stools
  - Having daily, normal bowel movements
  - Has remarkable feeling that overall health has improved. “I have never felt better”
Case #2  “Nurse Shelia”

- Follow-up 1/19/2012:
  - Maintained complete freedom from abdominal pain, headaches, insomnia, abnormal stools.
  - Having daily, normal bowel movements
  - Has remarkable feeling that overall health has improved. “I have never felt better.”
  - She discusses further cessation of medications with gastroenterologist
Case #2 “Nurse Shelia”

- Follow-up 3/1/2012:
  - Had follow-up with gastroenterologist and has been able to discontinue all medications. She has been off of Methotrexate for 4 weeks without symptoms, has gone off Cimzia as well.
  - Treatment plan: strict adherence to SCD, acupuncture every other week, and naturopathic follow-up in 6 months.
  - Maintains relationship with gastroenterologist for care as needed.
Case #2 “Nurse Shelia”

- Follow-up 12/2012
  - Maintaining perfectly on maintenance plan

- Complete adherence to SCD
- Periodic acupuncture at Pearl Natural Health
- Stress reduction – change in work schedule
Case #3 “Brian”
Case #3: Brian

- Diagnosed age 13 with Ulcerative Colitis
- Onset 2007: severe diarrhea, bloody stools, blistering rash, failure to respond to antibiotic therapy; vaccinations preceded onset
- Initial control with 6MP for 2 years, but then had a virus with a flare leading to weight loss and resurgence of symptoms. Control only coming through higher and higher doses of prednisone
Case #3 “Brian”

- On multi-medication regimen of 50mg 6 MCP, 100mg Lialda, 100mg Allopurinol, 1.5mg LDN, and prednisone 5mg every other day
Case #3: Brian

- Has been working with another alternative and complementary provider who worked him up for SIBO, but did not treat, and put on LDN, as well as starting on SCD.
- On day 12 of SCD with poor response to all treatment, conventional and alternative/complementary
- Reports that SCD is impossible for him, causes severe nausea, and doesn’t work. Has bowel urgency and diarrhea. 5 stools per day. Frail appearance. Losing weight.
Case #3: Brian

- **Initial Diagnostic and Treatment Plan:**
  - Complete laboratory evaluation
  - Re-start SCD in earnest with proper supervision
  - Complete laboratory evaluation
  - Trial Nutritional I.V. and Acupuncture (determine tolerance and response)
Case #3: Brian

- Initial Response
  - Losing weight and “fatigued” on SCD. “Can’t do it!”

- But also “better week – Slightly less urgency, and more time between bm’s”
<table>
<thead>
<tr>
<th>Lab Reports:</th>
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<tbody>
<tr>
<td>- Evidence of nutritional insufficiencies (low markers for vitamins, minerals, amino acids)</td>
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<tr>
<td>- High inflammation markers</td>
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<tr>
<td>- Low markers for GI enzymes → pancreatic insufficiency</td>
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<td>- Markers for fat malabsorption</td>
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</table>
Case #3: Brian

- Other Findings
  - Absence of dysbiosis
  - Excellent response to acupuncture and I.V. therapy
Case #3: Brian

- **Revised Plan:**
  - Every other week nutritional I.V. therapy and acupuncture
  - Nutritional supplements: digestive enzymes, fish oil, prebiotics, multi-vitamin, S. boullardi, L. Glutamine
  - Strict Anti-Inflammatory Diet (alternative to SCD)
Case #3: Brian

- Response to Revised Plan:
  - Weight gain
  - Decreased frequency of stool (x 3 day), increased formation, but still urgent
Case #3: Brian

- Gastro-Test
  - Result indicating hypochlorhydria

- Addition to plan
  - Betaine HCL supplementation
  - Homeopathic Treatment
Case #3: Brian

- Response to plan revision:
  - Decreased number of BM’s to 2, increased formation, decreased urgency
  - Diet restrictions loosened to 50% compliance
  - Remission of symptoms maintained for 4 months
  - Pediatric gastroenterologist stops Lialda
Case #3: Brian

- 9/2012
  - Decreased number of BM’s to 1-2, normal formation, no urgency
  - Nutritional IV’s discontinued. Acupuncture discontinued
  - Reduction but continuation of supplementation
  - Relaxed dietary restrictions
  - Healthy weight
  - Activities of daily living normal
  - Pediatric gastroenterologist reduces 6MP
Case #3: Brian

11/2012

- Academic stress and “first girlfriend” stress
- Loosening of diet to estimated 25% compliance
- Increase in stools to 2-3 per day, soft
- Pediatric gastroenterologist waiting for final cessation of 6MP until after next colonoscopy

What intervention is now needed?
Discussion of Cases

• Each case required unique combination of therapies
• Each case involved a dietary strategy

What are the common themes of these cases?

• Each case required either a very strong advocate—patient/parent, or a cooperative and open-minded gastroenterologist
• Each case involved “self-regulation” and “healing” that goes beyond medical management
• Each case involved a complete evaluation, with treatment targeting mechanisms thought to be behind susceptibility to IBD
The Integrative Approach

- Each case involved treatment of a disease occurring in the context of total health.
INFLAMMATION RESPONSE
- Interleukins, Cytokines
- TH1-TH2
- Prostaglandins, Thomboxanes, Leukotrienes

DYSBIOSIS
- Disruption of normal flora
- Yeast/Fungi
- Bacteria
- Parasites

STRESS FACTORS
- Mental/Emotional Stress
- Environmental and physical stressors
- Endocrine Insufficiencies

OTHER DIGESTIVE FUNCTIONS
- Gastric Acidity
- Intestinal Permeability
- Intestinal Enzyme Activity

GENETICS
- Predisposition
- Susceptibility

IMMUNE SYSTEM FUNCTION
- Impairment
- Over-activity
- Auto-aggression
- Role of pathogens
- Role of host defenses

NUTRITIONAL AND DIETARY FACTORS
- Dietary choices
- Nutrition & Malnutrition
- Food allergy
- Need for anti-oxidants
- Fatty Acids & Oils

NON-TRADITIONAL DISEASE “PATTERNS”
- Chinese Medicine “diagnostic patterns”
- Other “diagnostic patterns”
What’s Working?

- Overall integration ➡ Combining therapies, observing outcomes
- Implementing a dietary strategy ➡ SCD, GAPS, AID, Hypoallergenic
- Microbial balancing ➡ Anti-microbial meds, herbs, SCD, probiotics, fecal transplant
- Treating the “whole” of digestion ➡ hypochlorhydria, pancreatic insufficiency, probiotics
- “Energetic” medicine component ➡ Acupuncture, homeopathy, neural therapy, etc.
- Low Dose Naltrexone Therapy ➡ 1.5mg – 4mg at bedtime
- Treating nutritional deficiencies & insufficiencies ➡ Oral supplementation, intravenous nutrition, anti-oxidants, amino acids, trace minerals
What’s Working?

- **Stress Reduction**
  - Detoxification, allergy-load reduction, meditation, exercise, Tai Qi, Qi Gong, prayer, Psychological counseling
Integrative Evaluation

- Complete medical history: establish the role of IBD in the context of total health

- Special consideration is given to the following:
  - Dietary habits and history
  - Nutritional status
  - Ability to digest
  - Functional endocrine
  - Body toxicity
  - Stressors
  - Patterns of symptoms as understood in alternative diagnostic paradigms such as Chinese Medicine
Integrative Evaluation

- Patient goals outlined:
  - patient leads the agenda
  - better control of symptoms?
  - reduced corticosteroids?
  - decrease reliance on medication?
  - remission?
  - dietary refinement?
  - treatment of side effects of other medication
<table>
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<tr>
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<tr>
<td><strong>Metabolic panels</strong></td>
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<tr>
<td><strong>C.B.C.</strong></td>
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<td><strong>CRP &amp; ESR</strong></td>
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<td><strong>Microbiological assessment</strong></td>
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<td><strong>Food allergy panel</strong></td>
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<td><strong>Nutritional testing</strong></td>
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<td><strong>Intestinal Permeability</strong></td>
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<td><strong>Gastric Ph analysis</strong></td>
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<td><strong>Liver detoxification</strong></td>
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<td><strong>Toxicity Testing</strong></td>
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Integrative Treatment Plan

- Most patients are already on a medical plan consistent with conventional gastroenterology
- A complementary plan is commenced, simultaneously
- The medical plan changes as symptoms improve
Integrative Treatment Plan

Successful Integrative Plan

Reduced Or Eliminated Meds

Low Dose Naltrexone
Can this drug treat Cancer, Arthritis, and Auto-Immune Disease?

Mindfulness & Meditation
Stress Reduction & Mindful Breathing exercises & techniques
Jon Kabat-Zinn

Transplant
How to Integrate

- Self-advocate
- Assemble a “team”
- Work with an open minded gastroenterologist
- Seek alternative and complementary providers with experience treating individuals with IBD
- Use medications as needed, but “keep your eye on the prize”
- Treat the “whole” of you, not just the parts
- Become educated and take charge of your health
Pearl Natural Health
Complementary and Alternative Medicine Program

- Comprehensive Evaluation and Treatment
- Alternative care (where appropriate)
- Complementary support to conventional care
Pearl Natural Health
Complementary and Alternative Medicine Program

- SCD and THERAPEUTIC DIET implementation services
- SCD counseling and support group
- Medical Consultations – second opinions
- Supportive care
  - Acupuncture
  - Low Dose Naltrexone
  - Intravenous Nutrition
  - Adrenal Support during steroid withdrawal
- Dietary counseling
- Fecal Transplantation
- Other therapies
Treatment Decisions

Conventional Medical Plan OR Alternative Medical Plan
Treatment Decisions

- Conventional Medical Plan
- OR
- Alternative Medical Plan
Integration

“Combining parts so that they work together, or form a whole...”
Combining Therapies For Optimal Results

Complementary, Alternative, and Integrative Care for Inflammatory Bowel Disease

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