



An Integrative Approach to Abdominal Pain in Children

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Disclosures

- Nothing to disclose
- Thanks to Mark Integlia MD, our peds GI for some of his slides.

Goals

- What is CAM/IM?
- Treatment philosophy
- Approach to GI issues, specifically abdominal pain.

What is CAM/IM

- Broad Categories
 - Conventional Med
 - Nutrition/Diet
 - Exercise/Physical Activity
 - Whole systems (TCM, Ayurveda, Naturopathy, Homeopathy)
 - Botanical med
 - Energy Medicine (Reiki, Healing touch, Qi Gong etc)
 - Supplements
 - Spirituality
 - Manual Medicine (OMM, Chiropractic, Massage, PT, Zero balancing, reflexology etc)
 - Mind-Body Medicine (Hypnosis, Biofeedback, Guided imagery, Creative therapy etc)

Are people using it and how much?

- For GI issues, studies with >50% of all patients using some form of CAM.
 - Langhorst et al Inflammatory Bowel diseases 2005
 - Barnes et al Nat Health stat reports 2008
- In US general population, 40 Billion dollars/year spent on herbal/supplements.
- Patient driven changes in medicine. Physicians now need to learn, understand and be less judgmental of CAM/IM in order to work with patients.
- Manitoba Inflammatory Bowel Cohort 2011
 - 74% used CAM at some point, 40% at multiple points over 54 months and ~15% at every point.

Treatment Approach

- Multi-level approach
 - First: Dealing with the acute illness, IE what can we do to help treat the disease or manifestation of the disease right now.
 - Second: Decreasing long term aspects of the disease, IE preventing flares, decreasing long term needs/dosages of meds
 - Third: Change from a disease to a wellness model. Basically, all patients have more wellness than disease, thus improve the wellness to lessen the disease. The patient is the patient, not the disease. Managing all the issues related to a person dealing with a chronic illness. (STRESS!)
 - Fourth: Helping to decrease/manage med side effects. IE sleep issues with steroids, liver toxicity etc.
- Complexity vs reduction theory
- Healing vs curing.

IBS

- Complex disease
- Multiple factors
- Heterogeneous
- Frustrating for all
- Recognizing reality of pain and mind-body component. Better than “all in your head”
- Patient-practitioner interactions critical.
 - Kaptchuk et al BMJ,2008
- More recent data with ~ 50% using CAM

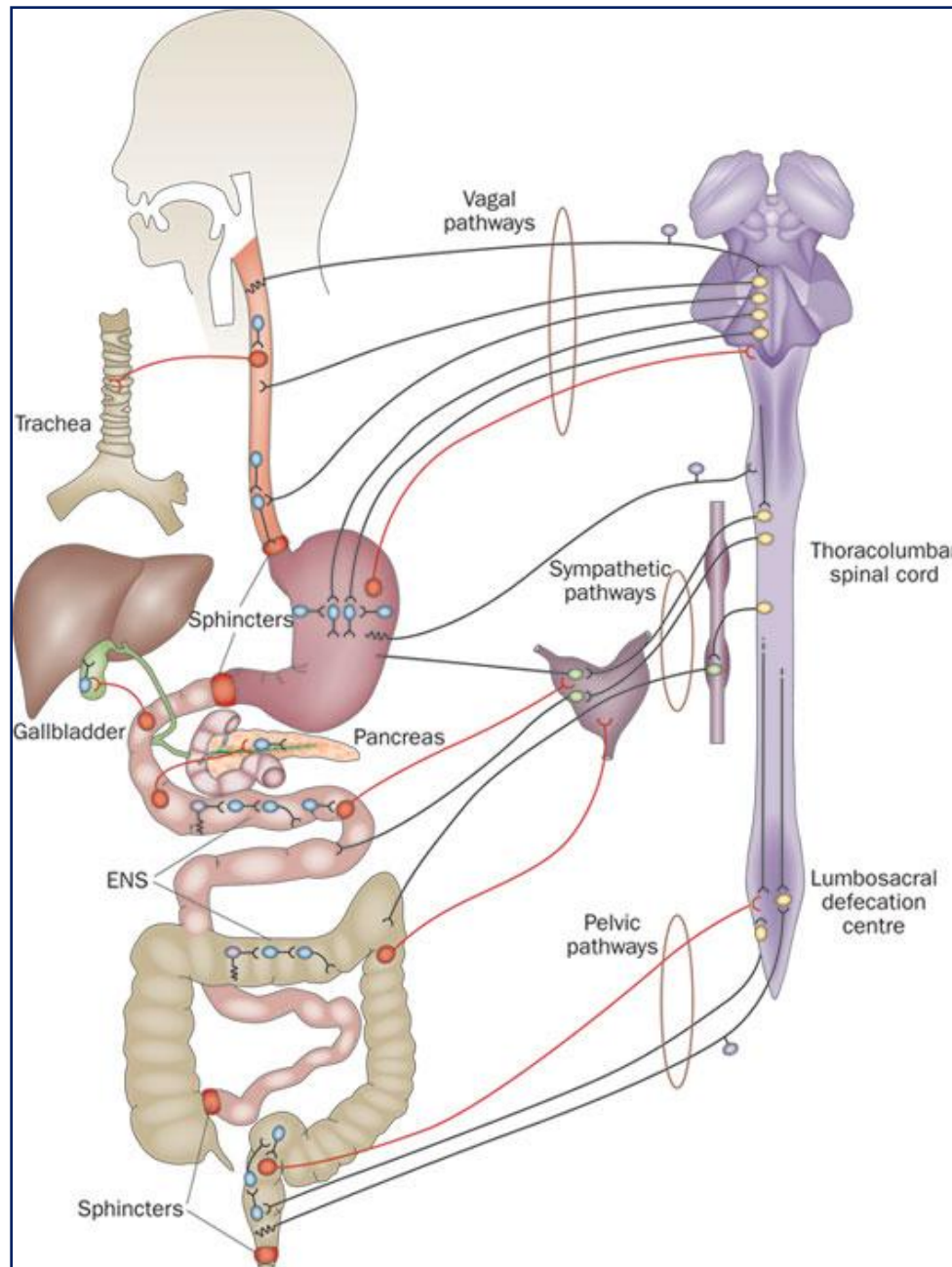
Chronic Abdominal Pain

- 3 episodes over 3 months
- debilitation
- continuous, dull, vague, diffuse
- recurrent
- associated with “psychogenic” disorders
- Etiologic possibilities: constipation, lactose intolerance, mittelschmerz
- consider secondary gain, sexual abuse, school phobia

Functional Abdominal Pain

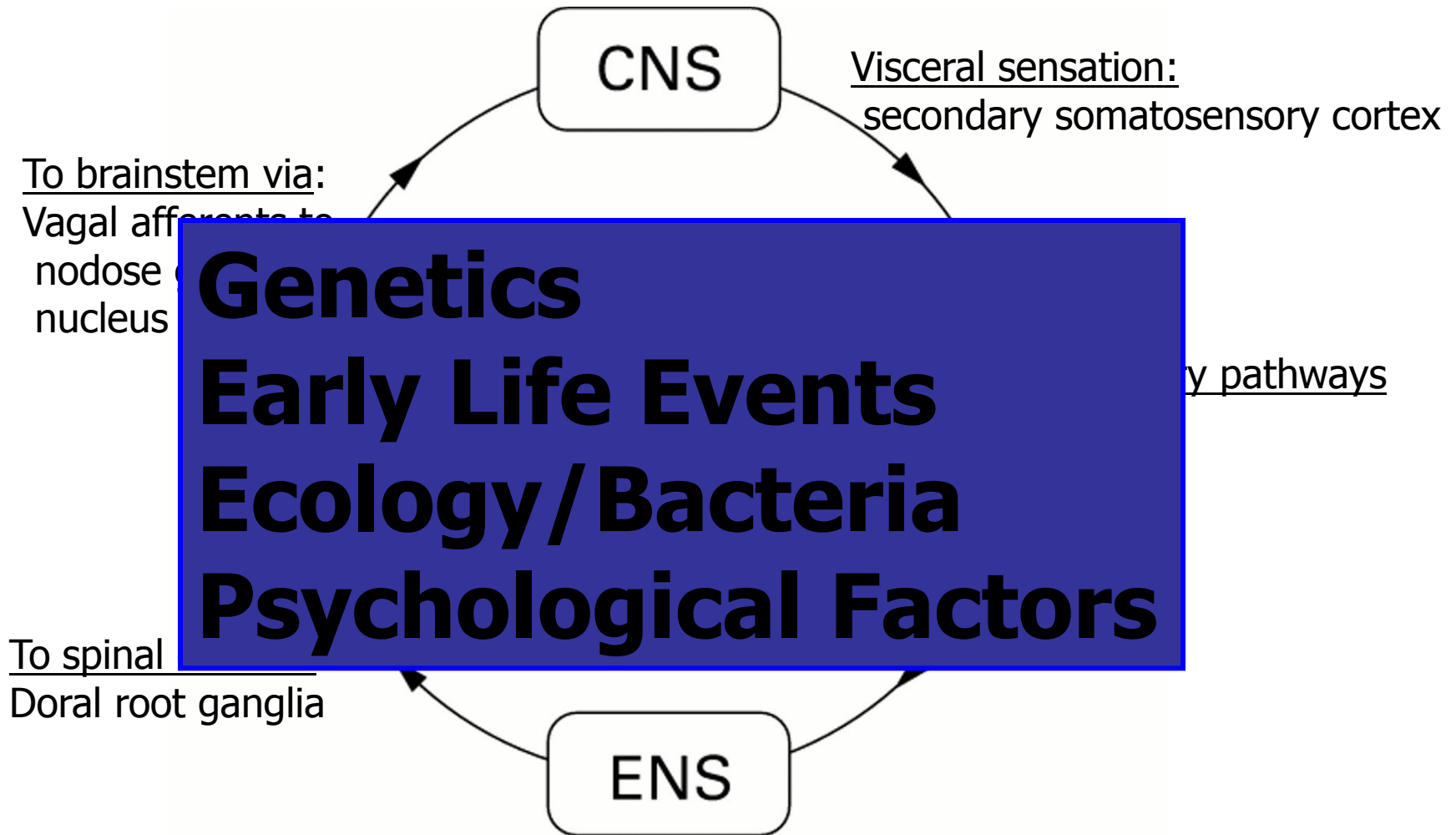
- Quality of life in adults with FAP poor
- Expense associated with IBS in adults estimated to be \$8-30 billion per year
- Economic impact in children not known
- Young adults with FAP more likely than peers without FAP to develop psychiatric problems and migraine headaches

Mark Integlia Slide



Abdominal Pain Triggers

- Distention
- Inflammation
- Ischemia



Where does an abnormality begin?

Treatment

- Education
- Nutrition
 - Elimination/Food avoidance
 - High sugar content
 - Gluten (Biesiekierski et al Am J Gastr 2011)
 - Dairy (lactose intolerant)
 - Consider strict elimination diet based on clinical findings/severity.

Exercise: Critical

- Yoga/Tai chi/ Walking/Martial arts
 - Recommend non-competitive exercise with focus on wellness even if competitive athlete. Helps to “take back control”, focus on health, stress reduction, moving meditation.
 - Other cultural systems place big emphasis on GI tract, wellness stems from health GI tract “not just eating and pooping”
 - Thus, much of yoga and tai chi focus on improving GI function and recognizing wellness.
 - Taneja et al Appl Psychophys Biofeed, 2004 in IBS
 - Birdee et al Acad Pediatr 2009 Review of yoga in pediatrics
 - Evans et al Trials 2011 Starting trial of yoga with IBS
 - Kuttner et al Pain Res Manag 2006 IBS

Botanicals/Supplements

- Usually look at constipation vs diarrhea IBS
- If both try and focus on primary concern or secondary symptoms IE bloating, nausea etc.
- Commonly Bloating is a major complaint, therefore carminatives are popular herbs.
- Carminatives may have secondary effects such as anti-emetic, anti-inflammatory, URI treatments, anxiolytic.

- Some Carminatives: Anise, Basil, Caraway, Catmint, Cinnamon, Dill, Fennel, Ginger, Lemon balm, Peppermint, Sage, Thyme
- Spices which can be added to foods or used as supplements

For constipation IBS

- **Ginger**: helps with slowed transient times and gastroparesis/bloating, nausea, fullness.
- Prokinetic action mediated by spasmolytic activity upon Ca⁺⁺ channels
- Has 5-HT₃ antagonist components.
- Wu et al Eur J Gastr Hepatol 2008
 - Accelerated gastric emptying, stimulated antral contractions > placebo
- Studied in morning sickness: 8 studies showing effectiveness
- Studied in chemotherapy induced Nausea
 - If given before chemo, reduced Nausea by 40%
- Use root, not concentrated extract
- 250mg to 1.0 gram; max adult dose of 5 gm per day,
 - Dried or fresh root, tea, powder form, liquid extract,
 - tincture, tablets, capsules, ginger beer and candied form



Psyllium and Flax



- Psyllium used as dietary fiber, mucilage absorbs water, softens stools
 - Big side effect is bloating, recommend starting at low dose and increasing.
- Flax: Rich in Omega 3s, mucilaginous, 1-2 tbsp in 2 cups water, steep 5 -10 minutes strain and drink throughout the day.



Triphala and Licorice

- Common Ayurvedic treatment for constipation, may also help with diarrhea
 - 3 fruits (Terminalia chebula, T. blerica, Phullanthus embeilica)
 - Comes as powder or pill. I commonly add to senna/chamomile tea.
- Licorice: 5-HT3 receptor antagonist



Diarrhea IBS



- Ford et al BMJ, 2008 reviewed Treatments
 - Hycoamine 22 trials, Tegaserod 8 trials, Alosetron 6 trials, Tricyclics 8 trials, **peppermint oil 8 trials.**
 - Overall more effective than placebo, **Peppermint with the smallest treatments to effectiveness.**
- Peppermint: commonly used as gut remedy.
 - Prolongs orocecal transit time, inhibits smooth muscle contraction through ca-channels. Rapidly absorbed in proximal gut so needs to be enteric coated to avoid upper GI side effects.
 - Goerg kj, Alim Pharm Ther 2003, Gigoleit Phytomedicine 2005
 - Also used to reduce colonic spasm with GI procedures.
- Chamomile: antispasmodic, possible anti-inflammatory
 - German study: 2006, chamomile and pectin reduced severity and duration of diarrhea
 - Savino et al Phyotherp 2005, combined with fennel helped colic vs placebo

Complementary and Alternative Therapy



Peppermint oil:

Carminative- gas relieving

Menthol- component which acts to relax smooth muscle by blocking calcium channels; most products have 44% menthol

Also found to have mild topical anesthetic effect

In children found to be both safe and effective.

Dose: 0.2-0.4 ml per day

Forms: enteric coated, peppermint oil soft gels, oil

Randomized, double-blind, controlled 2-week trial:

50 children; dose- 1-2, 187mg peppermint oil 3X/day for 2 weeks

76% receiving enteric coated peppermint oil caps with decrease S

19% decrease in placebo group

Kline et al. *J Pediatr* 2001;138:125-8.



Iberogast

- Proprietary blend of Chamomile, peppermint, caraway, candytuft, licorice lemon balm and +/- milk thistle, angelica and celandine depending on which prep
 - Madisch et al Aliment Pharm Ther 2004, >200 pts placebo, randomized, blinded. Stat sig improvement.

Probiotics

- Many RDBC Trials in IBS
 - 10 with benefits, from overall improvement to reduction in flatulence
 - 3 others with improvement but no better than placebo (note 40-50% improvement in both arms of study!)
 - Most common organisms: Lactobacillus, Bifidobacterium, and Saccharomyces

Complementary and Alternative Therapy

Probiotics:

Ecosystem of gut may differ at times of illness and health

Anti-inflammatory effect of probiotics

Barrier effect with alteration of mucus layer

Treatment- traveler's diarrhea and viral gastroenteritis

Lactobacillus and Bifidobacterium studied most often

Forms- powder, yogurt, capsules, chewable tablets, freeze-dried powders, wafers and beverages.



Complementary and Alternative Therapy

Probiotics:

Lactobacillus rhamonosus GG (LGG)

Randomized, double-blind,, placebo-controlled trial receiving either LGG or placebo for 8 weeks; 141 children

Outcome: overall pain at end of intervention period

LGG- significant reduction of frequency and severity of abd pain
 $p < .02$ and $.001$ respectively

Week 12: treatment success: 48 children LGG vs. 37 placebo
 $p < .03$

Francavilla et al. *Pediatrics*. 2010;126:e1445-e1452.



Anxiety

- Major component and I almost always treat
 - Hops: excellent herb. Also effective as a bitter for upper GI issues. Pills or tinctures, commonly add to tea
 - Valerian: commonly used for sleep. Smells bad. Can come in combination with hops/lemon balm, chamomile.
 - L-Theanine: anxiolytic from green tea.

Mind-Body

- Mind-body
 - Hypnosis/Guided Imagery/Biofeedback
 - CBT
 - Excellent!



Complementary and Alternative Therapy

CBT:

Children and caregivers are taught:

- reframe perception of pain
- reward well behavior
- establish contingency plans for management of pain
- attempt to ignore pain behavior
- use of positive self-talk, relaxation and imagination



-56% pain-free initial response with 75% pain-free at 6 months

Sanders et al: *J Consult Clin Psychol.* 1994;62:306-314.

-Groups taught CBT: 72% pain-free post intervention

Humphreys et al: *J Pediatr Gastroenterol Nutr.* 2000;31:47-51.

-25% decrease in pain scores and 30% decrease in absenteeism

Robins et al: *J Pediatr Psychol.* 2005;30:397-408.

Complementary and Alternative Therapy

Hypnotherapy:

Many similar characteristics to CBT

- An explanation of the physiology of pain
- An emphasis on non-pain behavior
- Relaxation and mental imagery

Major difference: specific suggestions for relief of pain via therapeutic



RCT: comparing effectiveness of HT vs. standard medical therapy

- 53 patients; age 8-18 years with FAP (n=31) or IBS (n=22)
- HT: 6 session over 3 months
- SMT: standard medical care and 6 sessions supportive care
- pain intensity, frequency and associated symptoms were scored post therapy, 6 mo and 12 mo.

Vlieger et al. *Gastroenterology*. 2007;133:1430-1436.



Complementary and Alternative Therapy

	<u>post</u>		<u>6mo</u>		<u>12mo</u>	
	<u>SMT</u>	<u>HT</u>	<u>SMT</u>	<u>HT</u>	<u>SMT</u>	<u>HT</u>
<u>Improved</u>	32%	26%	17%	22%	29%	11%
<u>Remission</u>	12%	59%	17%	71%	25%	85%

P < .001 between treatment groups at all end points

Vlieger et al. *Gastroenterology*. 2007;133:1430-1436.



Complementary and Alternative Therapy

Biofeedback:

- Combines relaxation and mental imagery with visual or auditory feedback of somatic changes
- ie: skin temperature, skin resistance, heart rate variability
- Especially helpful in modulating autonomic reactivity

Guided Imagery:

- A form of self regulation in which a state of deep relaxation is induced using progressive muscle relaxation (PMR)
- The subject is then guided to actively create images to facilitate resolution of the problem
- Differs from hypnosis in that the patient creates their own solution
- Especially effective in children due to their ability to have active, creative imaginations



Manual therapies

- Manual Therapy
 - OMM
 - 10 studies, 5 randomized RCT
 - Suggests helps short term symptoms
 - My experience: helpful



Acupuncture/Moxibustion

- Analgesic effect
- Also targets underlying issue (IE Nausea, bloating, constipation etc)
- Some variability in studies but depending on condition can be effective

Forty-Three

In ancient times, people lived holistic lives. They didn't overemphasize the intellect, but integrated mind, body, and spirit in all things. This allowed them to become masters of knowledge rather than victims of concepts. If a new invention appeared, they looked for the troubles it might cause as well as the shortcuts it offered. They valued old ways that had been proven effective, and they valued new ways if they could be proven effective. If you want to stop being confused, then emulate these ancient folk: join your body, mind, and spirit in all you do. Choose food, clothing, and shelter that accords with nature. Rely on your own body for transportation. Allow your work and your recreation to be one and the same. Do exercise that develops your whole being and not just your body. Listen to music that bridges the three spheres of your being. Choose leaders for their virtue rather than their wealth or power. Serve others and cultivate yourself simultaneously. Understand that true growth comes from meeting and solving the problems of life in a way that is harmonizing to yourself and to others. If you can follow these simple old ways, you will be continually renewed.

Lao Tzu, Hua Hu Ching