Pediatric Integrative Medicine In the Office

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IM/CAM in Pediatrics

• Goals
  – What is IM/CAM
  – Prevalence/Epidemiology
  – Things that I get called about
  – IM approach to headaches
  – ADHD supplements
  – Colic
  – Resources
  – What are we doing to change the health care of children
My initial thoughts

• Healing vs. curing
• Is there research?
• Cross over in modalities
• Not clearly toward the disease but more the experiences/life of the patient (sleep, wellness, anxiety etc)
• Many names, many tools, don’t get frustrated
• Opening the mind
• You can’t go back
• “this isn’t complementary and alternative medicine, it is just good medicine”
What is 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)
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 the medical model from disease to WELLNESS. Every patient has more wellness than disease. “We all get something, it is what we do with it ➔ view it as a gift”.
  - Fourth: Helping to decrease/manage med side effects. IE sleep issues with steroids, liver toxicity etc.
Basic Principles

Nutrition
Exercise
Stress Reduction
Mind, Body and Spirit Approach

Underneath all treatment modalities, these are the basic principles for all patients. If we can simply do these, we will improve the patients quality of life.

Complexity vs. reduction thought.
Wellness vs. Disease model
Who is using it and what are they using

- In the US, (1997)~1/3 of all adults use CAM
- Visits to CAM providers
  - 1990:420 million, 1997:629 million (up by 47%)
  - 1997 estimated 21.2 billion dollars ~12 billion out of pocket
- More recent estimates ~62% adults using CAM
• In Children: ~20-40% of healthy children seen in outpt clinics use CAM
• >50% of children with chronic, recurrent or incurable illness use CAM
• ALMOST ALL STILL CONTINUE WITH WESTERN TREATMENTS!
• For specific conditions:
  – For Asthma: 33-89% pediatric patients using CAM to some degree.
  – For GI issues, studies with >50% of all patients using some form of CAM.
What does this mean?

- 2000- The AAP convened a Task Force on Complementary and Alternative Medicine
- 2001- Statement from the AAP Committee on Children with Disabilities regarding counseling families on CAM
- Insurance
  - 1996: Insurers reported 70% increase in demand for CAM services
  - 2004: Prominent HMO with 87% coverage of Chiropractic, 47% for Acupuncture
  - Medicaid: of 46 states that reported: 33 states reimburse chiropractic, 10 biofeedback, 7 acupuncture, 5 hypnotherapy and naturopathy.
  - **MaineMedicaid**
    | Year | 2002 (%change) | 2003     | 2004     |
    |------|----------------|----------|----------|
    | CHIROPRACTIC | $690,464 (56.1%) | $818,360 (18.5%) | $978,056 (19.5%) |
Research

• Major issue when trying to evaluate and discuss CAM in Western medicine
• Commonly stated “There’s no data” or “the data is all bad”
• As of 2002, there were >1400 randomized controlled studies regarding CAM therapies. ~50 systemic reviews.
• In 2005, two reviews in J Clin Epid, showed that the quality of RCT in CAM and the reviews were equal to or exceeded that of conventional medicine.
• In addition: 2005 Review noted publication bias in CAM was opposite that of conventional medicine. Negative studies are more likely to be published and positive studies are more likely to be published in foreign medical journals.

• Difficulties:
  – Marked variation in modalities
  – Differences in diagnosis
  – Individualized care, particularly with whole systems.
  – Consistency with treatment therapies (doses/concentrations, compliance, practitioner etc)
Functional Abdominal Pain Therapy

Recurrent Abdominal Pain:
- Address Diagnosis
- Address Pathophysiology
- Work-up if red flags present
- Normalize lifestyle
- Fiber therapy, bulking agents
- Medications: anti-spasmodics, H2RA, PPI, anti-emetics, motility, bacterial overgrowth

From Mark Integlia MD,
Dir. Peds GI NHHC
## Use of Different CAM Therapies

<table>
<thead>
<tr>
<th>CAM Therapy</th>
<th>Patients (N=278); n (%)</th>
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</thead>
<tbody>
<tr>
<td>Phytotherapy</td>
<td>128 (46)</td>
</tr>
<tr>
<td>Supplements</td>
<td>100 (36)</td>
</tr>
<tr>
<td>Manual therapies</td>
<td>66 (24)</td>
</tr>
<tr>
<td>Homeopathy</td>
<td>61 (22)</td>
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<tr>
<td>Energy Medicine</td>
<td>48 (17)</td>
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<tr>
<td>Traditional Chinese Medicine</td>
<td>30 (11)</td>
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<tr>
<td>Bioelectrical therapies</td>
<td>22 (8)</td>
</tr>
<tr>
<td>Others (mind-body, philosophical, rest group)</td>
<td>35 (13)</td>
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</tbody>
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From Mark Integlia MD,  
Dir. Peds GI NHHC
Complementary and Alternative Therapy

**Mind-Body Therapy:**
* Cognitive Behavioral Therapy (CBT)
* Gut-directed Hypnotherapy (HT)
* Biofeedback
* Guided Imagery

**Botanicals:**
* Peppermint Oil
* Ginger

**Biologics:**
* Probiotics

Acupuncture
Yoga

*to be discussed

From Mark Integlia MD, Dir. Peds GI NHHC
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

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

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

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Dir. Peds GI NHHC
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 therapist

**RCT:** comparing effectiveness of HT vs. standard medical therapy (SMT)
-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.

## Complementary and Alternative Therapy

<table>
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<tr>
<th></th>
<th>post</th>
<th></th>
<th>6mo</th>
<th></th>
<th>12mo</th>
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<tbody>
<tr>
<td></td>
<td>SMT</td>
<td>HT</td>
<td>SMT</td>
<td>HT</td>
<td>SMT</td>
<td>HT</td>
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<tr>
<td>Improved</td>
<td>32%</td>
<td>26%</td>
<td>17%</td>
<td>22%</td>
<td>29%</td>
<td>11%</td>
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<tr>
<td>Remission</td>
<td></td>
<td></td>
<td>12%</td>
<td>59%</td>
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<td></td>
<td></td>
<td></td>
<td>17%</td>
<td>71%</td>
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<td></td>
<td></td>
<td></td>
<td>25%</td>
<td>85%</td>
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**P< .001 between treatment groups at all end points**

From Mark Integlia MD, Dir. Peds GI NHHC

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 in 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

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Dir. Peds GI NHHC
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 Sx
19% decrease in placebo group

Complementary and Alternative Therapy

**Ginger (Zingiber officinale):**

Root of ginger plant chewed to alleviate nausea- ancient times
India- proverb saying that all good is found in ginger
Most often used in patients with nausea, dyspepsia, motion sickness
Prokinetic action mediated by spasmolytic activity upon Ca++ channels
Proven effectiveness in reducing postoperative nausea and emesis
Can cause mild abdominal pain in some patients

**Dosing:** 250mg to 1.0 gram; max adult dose of 5 gm per day
Ginger is available as a dried or fresh root, tea, powder form,
liquid extract, tincture, tablets, capsules, and candied form

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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.

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Complementary and Alternative Therapy

Probiotics:
Lactobacillus rhamnosus 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


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Colic

- Two good reviews
  - Rosen et al Pedi in review 2009
  - Rosen : Explore July 2007

- Fennel seed oil
  - 125 colicky babies, placebo controlled
  - 65% improvement in treatment group vs 24% control

- Botanical blends
  - Fennel, chamomile, vervain, licorice, lemon balm
    - Large volume (3 oz/day)
    - 57% improved crying vs placebo 26%
  - Fennel, chamomile, lemon balm, rosemarinic acid, b vit
    - Crying decreased by 85% in treatment group, stat sig vs placebo
    - 200->76 min per day
• Probiotics
  – 2009 L. Reuteri 100 mill CFUS
    • Compared to simetethone
    • Improvement in one week, increased over 4 weeks, 200min/d->159->51min/d
    • 95% response vs 7% in simetethone group
  – 2010 repeated with placebo only
    • Again stat significant in probiotic group
Manual medicine

• Infant massage
  – Multiple studies showing benefit in infant irritability and bonding

• Chiropractic
  – 3 studies that I have seen reviewed
  – 2 positive, one not
  – “no cracking!”

• OMM
  – Small study without control, improvement
Cautions

• Fennel is sometimes mixed or confused with Star Anise. Chinese anise is viewed as safe, Japanese is not -> neuro toxic. Thus good products are important
What is a “migraine”?  
Not everything that doesn’t fit is an “atypical migraine”.  
Suspect there is a big overlap.  
Prevention=get to the root  
The pain is very real, even if we can’t explain it  
It may be serving a purpose  
We all get something, what do we do with it.
Continued

- ~ 10% of population with migraines
- Women 3X more frequent
- 112 million bed ridden days
- $13 billion cost to employers in US
  - Hu et al Arch Int Med 1999
- 2-3 X greater school loss days in children with HA
• 2007 study (Diamond et al Headache)
  – 120,000 households contacted
    • 17.9 % females, 5% males w/ migraine criteria
    • ~ 60% never diagnosed
    • Only 12% using any preventive measures
Migraine ➔ Chronic daily HA

- 2-7% of all children diagnosed with CDH
- More evidence this may be related to medication overuse.
- Thus: high priority/emphasis on prevention/triggers
  - IE: stress reduction, sleep, exercise, eating habits
  - “Adjunctive non-drug therapies and lifestyle changes round out the requirements for a management plan. The chances for long-term remission or significant improvement are up to 65%”
  - Couch JR Curr Treatment Options Neur 2011
Triggers

- ~60% stress
- 54% sleep issues
- 39% missed meals
- Diet (caffeine-withdrawal, food additives etc.)
  - Rothrock et al Headache 2010
  - Back and neck pain
  - Dehydration
    - Me for 10 years 😊
Acupuncture

• The best summation

• “Consistent evidence that acupuncture provides additional benefit for treatment of acute migraines. Acupuncture is at least as effective as, or possibly more effective than, prophylactic drug treatment and has fewer side effects. Acupuncture should be considered a treatment option for patients willing to undergo this treatment”

  » Linde et al Cochrane Database Systemic Review 2009
Mind Body Therapies

- Guided imagery, biofeedback, CBT, Hypnosis and can consider certain herbs (anxiolytics/adaptogens)
- With stress being highest cause of migraine triggers, it would seem to make sense.
- Be mindful of patients religious and spiritual beliefs.
- Be aware of prior events that could have a PTSD effect
Quite a few studies on various techniques
Children very good with this given imagination
Best summary: “Behavioral treatments possess the most evidence for successful headache management. They have a long history of randomized trials showing efficacy and are considered the first line preventive options.”
– Nicholson et al Curr Treatment Options Neuro 2011
Supplements/Botanical

- Magnesium: early studies showed low mag in migraine sufferers
  - For Prevention: 2 studies (RDBPCT) show effective
  - For children, data on tension type headaches
    - Sun-Edelstein 2009
    - Grazzi et al Neurol Sci 2007
      » This had a 70% decrease in HA, 65% decrease in analgesia use and 75% improvement in lessening disability-not controlled
Riboflavin (B2)/CoQ10

- **Riboflavin**
  - >50% reduction in migraine headaches
  - Dose: 400 mg a day, biggest tablet is only 100 mg

- **CoQ10 (Ubiquinone)**
  - 50% reduction in migraine events (adults 100mg tid)
  - Pediatric study-1-3 mg/kg/day markedly decreased HA and disabilities
  - Need gel or liquid, can be expensive
Butterbur

- Quite good evidence, recently recommended by Amer Acad Neurology 2012
- 2 RDBPCT (Grossmann et al 2000, Lipton et al Neurology 2004
  - Open trial in children showing decreased frequency of HA.
  - PA free
  - Commonly studied one is Petadolex 75 mg bid
Feverfew

• 5 RCT, 3 with some benefit
• Interestingly herbalists report that only fresh plant works which may be part of the problem.
• Fresh plant can have mouth sores
• Can have withdrawal, IE rebound HA
• I have changed my practice
Ginkgo

• New product on the European Market
  – Ginkgo, CoQ10 and Riboflavin.
  – 3 trials good results (second two in kids)
    • D’Andrea et al Neurol Sci 2009
    • Esposito et al Neurol Sci 2011
    • Usai et al Neurol Sci 2010
  – Hard to know exactly effective agent but the latter 2 components are low dose.
Yoga

- John, PJ et al Headache 2007
  - 72 patients, randomized to yoga or self care
  - Stat sig decrease in headache intensity, frequency, pain rating index, anxiety and depression scores, medication use

- Small study from India showed TTH patients with greater decrease in temporalis muscle EMG activity compared to NSAIDS and botulism toxin.

- Multiple studies show stress reduction, anxiety and mood issues in adults.

- I like this for stress reduction, alignment, breathwork and regaining control of ones life
Manual therapies

• Osteopathic manipulation, Massage, chiropractic, PT
• Small studies but positive results
  – Ex Voigt et al J Alt and Comp Med 2011
• Interestingly in JAOA
  – OMM vs no OMM, chart reviewed study
  – 50% reduction in cost in patient treatments
  – Mostly meds
• To me, it is critical, healing touch and trying to remove a primary trigger
• One of the reasons I went back to active manipulation.
What are we doing?

- Wellness based approach: increase wellness, decrease disease.
- Our goal: all patients will have access to integrative care to improve outcome.
- Integrative approach in all areas of pediatric care: inpatient, outpatient, PICU, NICU, ER, Radiology.
Developing/Current Programs

• Subspecialty care: patient entering any program has access to integrative guidance approaches. Work closely together and coordinate visits
  – Currently hypnosis in Pulmonary and urology
  – Biofeedback with PT for voiding issues
  – Headache program with NP integrative approach

• IM consults for patients and practitioners: connects patients to all therapies and practitioners: kid friendly
  – At visit OMM, biofeedback, mind body
• Inpatient: IM consults, OMM, mind body, biofeedback, some supplements

• Developing
  – OMM for all ages and more access
  – Music therapy
  – Reiki/Energy medicine
  – Acupuncture
  – More mind body
  – Supplements/botanicals
• Greening the hospital
• Nutrition: already in place but looking at teaching cooking, more “food as specific therapeutic intervention”.
Clear Commitment

• Three (3) physicians heading to Univ Ariz to do fellowship
  – Mark Integlia, MD - Pediatric GI
  – Holly Neefe, MD - General Pediatrics
  – Denise Toshach, MD - Pediatric Hospitalist