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Saturday, June 11, 2016

16:30 - 17:25  WS #171: Complimentary Therapies in Respiratory Disease
17:35 - 18:30  WS #183: Complimentary Therapies in Respiratory Disease (Repeated)
Complimentary Therapies in Respiratory Disease

Julian Vyas, Respiratory Paediatrician, Starship Hospital
conflict of interest

- I have no financial conflict of interest from this talk.
- I have tried complimentary therapies in extreme circumstances with a few of my patients.
This talk…

❖ numerous different CAM’s.
❖ I have not considered all forms for all illnesses covered.
❖ this is a review of CAM in asthma, CF and COPD + some generic discussion on CAM evaluation
Definitions

❖ **Alternative therapy**: treatments used in place conventional medicine
❖ **Complimentary therapy**: treatments used alongside conventional medicine
❖ **Integrative therapy**: approach to bring use of conventional and complimentary practises together
❖ **CAM**: complimentary and alternative medicine
Taxonomy

- **Mind-body therapy**: yoga, tai chi, clinical hypnosis, biofeedback, creative art therapies, deep breathing exercises
- **Natural products**: herbal and botanical medicine incl. aromatherapy, vitamins, dietary supplements, probiotics
- **Manipulative and body based**: massage, lymphatic drainage, crayon sacral, spinal manipulation.
- **Other CAM**: Ayurvedic, traditional Chinese, tibetan, Thai, Native american, naturopathy, homeopathy
- **Energy**: acupuncture, Pilates, Feldenkrais, healing touch, Reiki,
Background

- USA: c38% adults, and 12 children <18 use some form of CAM
- c U$34B out of pocket expense
Commonest Used

10 Most Common CAM Therapies Among Adults - 2007

- Natural Products: 17.7%
- Deep Breathing: 12.7%
- Meditation: 9.4%
- Chiropractic & Osteopathic: 8.6%
- Massage: 8.3%
- Yoga: 6.1%
- Diet Based Therapies: 3.6%
- Progressive Relaxation: 2.9%
- Guided Imagery: 2.2%
- Homeopathic Treatment: 1.8%
Pts Using CAM:

- Need know what therapies being used, and how my influence conventional Rx
- Cultural context
- Respect pt choices
- If pt show interest, indicate limits of one’s own knowledge
- If pt making choice, give info that is reasonable re risks, side effects, benefits, and costs
Dr practising CAM, or referring to practitioner:

“There is an onus on the practitioner to inform the patient not only of the nature if the alternative treatment offered but also the extent to which that is consistent with conventional theories of medicine and has, or does not have, the support of the majority of practitioners…”

Director of proceedings v Dr RW Gorrings MPDT Decision no 237/02/89D
Dr practising CAM, or referring to practitioner:
- careful attention to process of informed consent where proposed tt is expensive, innovative or where scientific support is lacking
- must not exploit or misrepresent to obtain consent
- Ensure continuity of care- if not pts GP, ensure communication.
- Assess fully
  - Hx, o/e
  - Make Dx using a system with “appropriate research methodologies”
  - advise re evidence base & conventional Rx optons. risks, benefits, efficacy
  - document as per good practise
Dr practising CAM, or referring to practitioner:

- Treating:
  - Ensure Rx is efficacious, safe and cost effective
  - Have current knowledge in area
  - Be competent
  - Act honestly & in pts best interests
  - Provide info for informed choices. refer/ consult w others at pt request, when assistance needed or when std of practise requires it.
  - Not misrepresent info or option
  - Informed consent to treat
Asthma
Cystic fibrosis
COPD
Asthma

❖ “chronic inflammatory airway disease with reversible airflow obstruction”
Herbal

- Herbal remedies: commonest used, “dietary” supplements = limited regulation.
- 15-20% herbal remedies sold in US / via Internet contain potentially intoxicating levels of Pb, Hg, As, also found to contain phenytoin, indomethacin, corticosteroids¹
- ? risk of anaphylaxis/ bronchospasm for herbal products²

Herbal - Studies

- weak design
- ? problems of definition of asthma
- Cochrane: 27/252 studies.
  - no conclusive evidence

Vitamins

- airway hyper-responsiveness assoc w reduced b-carotene, a-tocopherol.
- Vit C: 12 studies, 6-41 subjects. Overall no conclusive difference FEV₁ or FVC.
- Vit D: low Vit D ssoc w wheezing, but Vit D Rx no shown to improve asthma
- Vit E: no benefit
Supplements

- Se: no benefit to lung function
- Mg: decr methacholine induced bronchial reactivity. not same as symptom control.
- Ubiquinone: no evidence
- Linoleic acid supps: decr methacholine induced bronchial reactivity. not same as symptom control.
- Caffeine: can improve FEV1, ? as good / less good than theophylline.
Mind-Body

- acupuncture: no clear benefit for asthma.
- moxibustion: risk of burns
- yoga, breathing and relaxation: “bronchial boogie” can improve symptoms.
- breathing retraining - after 6/12, dx asthma not confirmed on spirometry¹. Same group - retraining = dec symptoms, ice QoL, but FeNO, methacholine ISQ²
- yoga: no overall benefit
- Buteyko: no overall benefit.

¹ Thomas Thorax 2003; ² Thomas. Thorax 2009)
Manipulative & Body-Based

- chiropractic, osteopathy: No benefit. Strokes reported with chiropractic\(^1\)
- cranio-sacral therapy, reflexology: no benefit
- Alexander technique: no controlled trials

Other Integrative

- Homeopathy: mixed results - no consistent benefit shown.
- Dilute grass pollen reduces hay fever Sx.
- DB, PC, RCT, dust mite allergies - 1 study = incr spirometry, but Sx ISQ\(^1\); other = incr Sx, but spirom ISQ\(^2\).
- Successive decrease in IgE Ab’s = decr degranulation of basophils - w cc increase w certain concs. This was reproducible in different labs, but not explicable.\(^3\)
- Cochrane\(^4\): inadequate evidence. more studies needed.

Cystic Fibrosis

Search: “cystic fibrosis alternative treatment” = 648 000 hits

Top 10…
Top 10 Google hits

- **greenmedinfo.com**: omega-3, Magnesium, vitamin A, vitamin E, glutathione, lactobacillus -GG, hypertonic saline, zinc, lactoferrin, lactobacillus probiotic, garlic, tea, ginseng, papaya, curcumin, green tea, cinnamon water, clove/cinnamon/lavender/peppermint oils, goldenseal, Siberian ginseng, vitamin D3, licorice, amla, Aspen Bark extract, chicken soup, choline, fish oils, cordyceps, oats, Bing cherries, bilberry, pigmented potato (35)

- **drweil.com**: nutrition, decr omega-6, sat fats, refined or processed foods, incr omega-3, low/med GI foods, probiotics (7)

- **prevention.com** (personal story): Bikram yoga, ginseng, royal jelly, brewers yeast, bee pollen, glutamine, colostrum, NAC, Chinese herbal medicine, acupuncture, massage. (11)

- **earthclinic.com**: (“Cure CF Naturally”) apple cider vinegar, Mg, Himalyan salt, hydrogen peroxide, lobelia. NB: chat room, with dissent (5)

- **raysehalian.com**: Vitamin K, caretenoids, lutein, zeaxanthin, choline, not fish oils, flaxseed, magnesium, whey (9)
Top 10 Google hits

- Henry Spink: thyme, Indian tobacco, anise, hyssop, licorice, rosemary, coneflower (echinacea), goldenseal, wild indigo, antimonium tart, carbo vegetabilis, laurocerasus, acupuncture, moxibustion, silver (15)

- Naturalandhomeopathicremedies.com: thuya CH5 & C12, arnica C30, lymphomyosot, B complex vit, vit e, lactobacillus, blue green algae, saffron, ginger, juice of spinach/dandelion/nettle, echinacea, propolis, garlic, elderberry, Turkish rhubarb, sea kelp (18)

- Livestrong.com: Boswelia, cayenne, ginger, peppermint, elecampane, garlic, horehound, hyssop, mullen (9)

- University of Maryland: co-enzyme Q10, catsclaw, milk thistle, ground ivy (4)

- Cfandhealthy.com: resveratrol, quercetin, coconut oil, phage therapy (4)
GSH, curcurmin & genistein

- GSH:
  - transported by CFTR, as well as Cl- and HCO3-.
  - w aberrant CFTR - cant get GSH efflux from apical surface of cell
  - ASL levels low
  - but high in sputum.
  - ? supplementation w GSH causes pro oxidant environ via gutamyl transferase causing S-thiolation of proteins.
GSH, curcurmin & genistein
GSH, curcurmin & genistein

- Curcurmin:
  - in vitro - improves G551D function.
  - With genistein (flavone, from soya) - additive effects to G551D function.
  - no RCT yet. internet +++

Ying-Chun Yu J Cyst Fib 2011
<table>
<thead>
<tr>
<th>Treatment</th>
<th>References</th>
<th>+“CF”</th>
<th>Clin Trials</th>
<th>RCT</th>
<th>Comments</th>
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<td>Xylitol</td>
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<td>RCT: no change in FEV1</td>
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<td>Dornase</td>
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<td>140</td>
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<td>Cochrane: incr FEV1 at 1, 6, 24nt. Decr exacs. No diff vs HTS</td>
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<td>Nasal/sinus dornase</td>
<td>25</td>
<td>12</td>
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<td>1: pilot for second. Improved SNOT-20 score.</td>
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<td>7/4</td>
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<td>No comparison of oral vs inhaled</td>
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Cystic Fibrosis

Top 10 Google hits = 90 different treatments

- OVID search each Rx and CF. Not Vit A, E, HTS, GSH, NAC, Vit D,
- No Medline results for boswellic, catsclaw
- Limit to clinical trials: 16
- Fish oils, Ω-3/Ω-6: i) Ω-3: dec ESR, IL8. ii) Ω 3: FEV1, FEF25, FVC no diff. iii) Ω6: incr ESR. iv) swap Ω6 for Ω3: no diff SB score, CI-, w, FEV1, FVC, FEF 25-75. v) fish oils: se FPA's no diff.
- Lactobacillus: i) GG decr exac (1 vs 2), decr admit (0 vs 1), FEV1 -1.6 to 8.8% (Rx) vs -4.1 to 5.9% (plac). i) Lactob. decr otitis/resp exacs. iii) restores N gut flora. iv) decr faecal calprotectin
Cystic Fibrosis

Top 10 Google hits = 90 different treatments

- Zn: i) no difference; ii) dec oral antibiotics. iii) reverses low Cu in CF
- garlic: clinical score, i/v need, weight - no difference
- Mg: incr SK score, respiratory muscle strength
- glutamine: no effect on muscle bulk alone. ? with hGH
- flaxseed: decrease inflam markers in urine.
COPD

❖ Body based:
  ❖ massage: 24 weekly treatments - improved “energy”, decr dyspnoea, inc sats, dec heart rate post massage.
  ❖ neuromuscular electrical stimulation:
  ❖ osteopathy: 1yr TLC/ RV better, spirom ISQ
  ❖ reflexology: quantitative benefit, no physiological
COPD

❖ Mind- Body:
❖ acupuncture/acupressure: St Georges Q’aire, 6MWT, PFT’s. Variable results. ? choice of placebo
❖ biofeedback: aid / visual feedback for HR, resp rate, Resp pattern, sats. data limited.
❖ breathing strategies:
   ❖ resp muscle training - meta analysis incr insp muscle endurance, decr dyspnoea,
   ❖ pursed lips: inc oxygenation, dear dyspnoea
   ❖ diaphragmatic breathing: ? effect on physiology,
COPD

- Hydrotherapy
  - incr FEV1/FVc, pCO2.
  - 120mins/w >> 20 mins/w
  - land vs hydrotherapy : ISQ

- Guided imagery
  - positive feelings for imagination. 4/52 study - improved perceived QoL

- Laughter: dec RV, positive attitude to illness

- Mindfullness Meditation: poor quality design
COPD

- Yoga
  - 5 studies:
    - dec dyspnoea
    - incr exercise performance
    - dec hr, rr, spirom ISQ
COPD

- Natural products:
  - aromatics: Vicks = increased tracheobronchial clearance - inc sputum weight, and cough frequency.
  - Co-enzyme Q10: improves treadmill performance and PaO2.
  - vit D: ? no RCT
COPD

- Traditional Chinese Medicine / Ayurveda:
  - 2006: meta analysis - 14 RCT’s. Poor quality.
  - Tanreqing i/v injections (std product, 5 herbs)
    - for COPD exec’s. 14 Chinese RCT. all report incr FEV1, PO2, dec PCO2, hosp stay.. small sample sizes.
Evidence Base

- Plausibility of effect - determines if an idea will be accepted.
  - Clinical plausibility - great distance between accepted models of health/illness/treatment, the greater the need for robust evidence.
Evidence Base

- CAM challenging to assess
  - often Sx have a remitting ad relapsing natural history
  - subjective end point
  - nature of the Rx themselves is poorly understood, if at all.
Lack of phase I or phase II studies may mean that optimal dose is not recognised e.g. GSH in CF

- trials need appropriate placebo e.g. acupuncture vs sham therapies
Explanatory vs pragmatic trials

- Pragmatic assess efficacy of package of care. Can’t differentiate relative contribution of components of the package
Evidence Base

- Qualitative
  - appropriate to understand meaning and belief of pt experience. Pt perceptions.
  - allows identification of poss benefits for individuals.
  - ease to predict others reponse to same Rx - but ? exists anyway even w RCT data.
  - allow insight into pt view on continuation or not of non-Rx only medicines e.g. Tai chi.
  - need “trustworthy data”
Summary

- Asthma: symptom relief but no consistent benefits with “hard end points”
- CF: interesting connection w pathophysiology. anecdotal benefits, some epiphenomena (calprotectin etc). ? role for GSH, curcurmin, genistein - needs RCT’s
- COPD: symptoms relief, in vitro some improvement in spirom.
Summary

- Badly need decent sized, proper RCT’s to justify help establish effective integrative Rx.
the plural of anecdote is not data