Disclosures

• Research Support
  - NIH
  - Stallergenes
  - Sanofi

• Scientific Director, UMMC Center for Integrative Medicine

• Chief, Laboratory of Behavioral Immunology Research

• Practicing Evangelical Christian
Objectives

- Describe the principles and components of integrative medicine as it relates to patients with allergic, asthmatic and immune-based diseases
- Discuss a pragmatic paradigm to using an integrative approach to care in a practicing allergist-immunologist office setting
Stress and Health

- Stress has been shown to be a factor in causing and/or worsening most diseases particularly those with an inflammatory pathophysiology
  - Mental
    - Anxiety/worry
    - Depression/dispair
  - Somatic
    - allergy/asthma/autoimmunity
    - heart, diabetes, cancer
But Doctor, I’m Not Stressed...

- Our society has become increasingly stressed
  - Pressures of life
    - Finances
    - relationships
  - Fear of dangers
    - natural
    - man-made
  - Loss of hope in the future

- Up to 75% of all office visits to physicians are stress related
Hippocratic Oath (excerpted)

I swear to fulfill, to the best of my ability and judgment, this covenant:

- I will apply, for the benefit of the sick, all measures which are required, avoiding those twin traps of overtreatment and therapeutic nihilism.
- I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug.
- I will remember that I do not treat a fever chart or a cancerous growth, but a sick human being, whose illness may affect the person's family and economic stability. My responsibility includes these related problems, if I am to care adequately for the sick.
- I will prevent disease whenever I can, for prevention is preferable to cure.
Integrative Medicine

- Puts the patient at the center and addresses the full range of physical, emotional, mental, social, spiritual and environmental influences that affect a person's health (WHO).
- Therapeutic goal is treating the whole patient using whatever evidenced-based therapy (conventional, complementary and/or alternative) that addresses patient needs
- Humans defined by the components of body, mind and spirit /soul
  - The “original” personalized medicine
- This approach to care is recorded from earliest medical history
  - “It is far more important to know what person the disease has than what disease the person has.” Hippocrates
Integrative Medicine Principles

- Let food be thy medicine and medicine be thy food” (diet)
- “Walking is man’s best medicine. ” (exercise)
- “A wise man should consider that health is the greatest of human blessings, and learn how by his own thought to derive benefit from his illnesses.” (outlook) 
  
  Hippocrates

- “…the success of relieving the patient depends upon an intimate knowledge of the total patient…”
- “Mental suffering impedes well being and adversely affects the respiratory organs”
Caring for Patients with Allergy and Asthma

- High level of morbidity
- Low level of mortality (but it is not zero)
- Care is aimed primarily at Quality of Life
  - Minimize/eliminate symptoms
  - Maximize activities of daily living, athletics, scholarship etc.
Goals in Caring for Patients with Asthma and Allergies

- Achieving/maintaining clinical control
- Managing Side Effects of disease and/or therapy
- Improving/maintaining Quality of Life
Spirituality and Health
Spirituality

- The way people find meaning and purpose and how they experience their connectedness to self, others, the significant or sacred
- A universal human characteristic
- One’s relationship with the transcendent expressed through attitudes, habits and practices
- Manifestations include religion, arts and humanism, cultural beliefs and practices
- The inner life of a person
Prediction of All-Cause Mortality by the Minnesota Multiphasic Personality Inventory Optimism-Pessimism Scale Scores: Study of a College Sample During a 40-Year Follow-up Period Brummett B et al. Mayo Clin Proc 81:1541-2, 2006
To Flourish or Not: Positive Mental Health and All-Cause Mortality. Keyes C et al. AM J Pub Health 2012

<table>
<thead>
<tr>
<th></th>
<th>Odds Ratio (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not flourishing (Ref = flourishing)</td>
<td>1.67 (1.04, 2.69)</td>
<td>.035</td>
</tr>
<tr>
<td>Chronological age</td>
<td>1.10 (1.09, 1.12)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Men (Ref = women)</td>
<td>1.45 (1.03, 1.99)</td>
<td>.031</td>
</tr>
<tr>
<td>Educational attainment</td>
<td>1.12 (1.12, 1.28)</td>
<td>.137</td>
</tr>
<tr>
<td>Blacks (Ref = Whites)</td>
<td>1.92 (1.19, 3.09)</td>
<td>.008</td>
</tr>
<tr>
<td>Other race (Ref = Whites)</td>
<td>1.33 (0.66, 2.68)</td>
<td>.429</td>
</tr>
<tr>
<td>Cigarette smoker (Ref = nonsmoker)</td>
<td>3.03 (2.10, 4.39)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>CVD (Ref = no CVD)</td>
<td>4.27 (2.57, 7.08)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
Stress, Anxiety, Depression, Worry

How can the mind affect the immune system?
Anxiety, Depression and Asthma

- Known association
- in adult asthma, panic disorder occurs in 6-24% of pts.¹
- in pediatric/adolescent asthma, anxiety disorder in 35%¹
- Depression present in 30-63% of asthma outpatients²
- Decrease in pulmonary function correlates with anxiety or depression scores¹,²

²Krommydas GC et al. Resp Med 98:220-224, 2004
Case

- 21 yo AA female engineering student presents with chief complaint of chronic cough, mild dyspnea and fatigue
- Began approximately three months ago with six weeks of moving to Oxford from Kansas to attend graduate school
- History of asthma beginning at age 2 which spontaneously resolved by age 9
- Accompanied by allergic rhinitis symptoms which have continued
Case

- Moved to an older apartment with three other roommates
- Within days cough developed, always worse when she was in her apartment
- Discovered that previous tenants had three cats
- She had gone to University Health Center and was diagnosed with bronchitis
  - Prescribed generic ciprofloxacin 500mg BID x 10 days and prednisone 40mg daily x 5 days
  - Advised to continue fluticasone and fexofenadine (prescriptions which had expired one month before and were renewed)
  - Symptoms improved significantly by day 3 and she stopped all medications by day 6 (after...
Case

• Within a week of completing prednisone, cough had returned even worse than before especially at night, waking her from sleep
• She wheezed only at end of forced expiration during coughing paroxysms
• She now was concerned that her cough may be asthma since her brother’s asthma started as a cough some years before
• Sought subspecialty care
Case

• Other historical information
  - ROS negative except for admitting mild depression from loneliness after moving from midwest to Oxford and anxiety about beginning studies at a new school

• Physical exam
  - Mild cough through exam especially with talking and deep breathing
  - Pertinent negatives: skin clear, no tracheal sensitivity, no wheezing
  - Pertinent positives
    ▪ Boggy turbinates and allergic shiners
    ▪ Oropharyngeal cobblestoning
    ▪ Midfield end expiratory wheeze on forced expiration only
Case

• Spirometry
  - Pre BD
    ▪ FVC 99% predicted
    ▪ FEV1 89% predicted
    ▪ FEV1/FVC 82%
  - Post BD
    > FVC 102% predicted
    > FEV1 102% predicted

• Allergy Skin Testing
  - Positive for oak tree, ragweed, cat, dust mites (Df, Dp), *Aspergillus spp.*
Case

- **Diagnosis**
  - Cough secondary to asthma (moderate persistent)
  - Combined seasonal and perennial rhinitis
  - Complicated by chronic stress and existential challenges leading to increased anxiety, worry and depression

- **Medication(s)**
  - Budesonide 200ug - 2 puffs BID
  - Montelukast 10mg - 1po daily
  - Fexofenadine 180mg - 1 po daily
  - Fluticasone nasal spray - 2 squirts each nostril daily

- **Environmental control measures**
  - Dust covers for pillows, mattress and box springs
  - Dehumidifier and HEPA air filter for bedroom
  - Regular dusting and vacuuming in bedroom (while wearing air filter mask)

- **Discussion with patient to establish interest in referral to**
  - Student Counseling Service for anxiety, depression assessment and management
  - Local young adult pastor for spiritual counseling
Usefulness of Integrative Medicine in Allergy and Asthma Care

What is the Evidence?
Herbal-based Therapies
Herbal (Botanical) Remedies
Basic Information

• One of fastest growing segments of healthcare industry
  - 2001- $4.2 billion spent for herbs and botanical remedies
  - 2012 - $12 billion

• Used for virtually all categories of illness
  - therapeutic
  - Supplemental (i.e. health promotion)
  - “prophylaxis”

• Mechanism of effectiveness range from placebo effect (expectancy) to pharmacological
Use of Herbal Remedies
Basis for Increasing Popularity

• Dissatisfaction with allopathic approaches
  - Health care team
  - Pharmaceutical choices/side effects/costs

• Fear over side effects of conventional therapies

• Control issues over maintaining own health

• Perception of safety/effectiveness

• Appeal of “natural “ approach
Safety, clinical, and immunologic efficacy of a Chinese herbal medicine (Food Allergy Herbal Formula-2) for food allergy

- Randomized, double-blind, placebo-controlled trial.
- Screening and baseline DBPCFCs with 2 g of protein
- Randomized to receive FAHF-2 or placebo (2:1), 10 tablets 3 times a day, for 6 months.
- After 6 months, repeat OFC
Safety, clinical, and immunologic efficacy of a Chinese herbal medicine (Food Allergy Herbal Formula-2) for food allergy
Safety, clinical, and immunologic efficacy of a Chinese herbal medicine (Food Allergy Herbal Formula-2) for food allergy

Safety, clinical, and immunologic efficacy of a Chinese herbal medicine (Food Allergy Herbal Formula-2) for food allergy
Proposed Immunomodulatory Activities for Selected Herbals in Allergy and Inflammation

Manardi et al. JACI 2009
Acupuncture
Acupuncture for seasonal allergic rhinitis: a randomized controlled trial  


Study Design

Assessed for eligibility (n=292)

Included (n=178)  
2 weeks baseline

Treatment 1  
Randomised (n=175)

Real acupuncture group (n=88)  
4 weeks treatment, 3 times/week

18 drop-outs  
Due to time restrictions

Real acupuncture group (n=70)  
4 weeks follow-up

Analysed with Intention-to-treat  
(n=88)

Sham acupuncture group (n=87)  
4 weeks treatment, 3 times/week

Excluded (n=114):  
- Not meeting selection criteria  
(n=46)  
- Time restriction (n=68)

Sham acupuncture group (n=81)  
4 weeks follow-up

Analysed with Intention-to-treat  
(n=87)

6 drop-outs  
Due to time restrictions

3 drop-outs  
Due to loss of contact


Note: The y axis represents the grass pollen count per cubic meter.
Psychological and Spiritual Interventions
Psychological Stress Affects Immune Mechanisms Associated with Asthma Activity

Chen and Miller
Brain, Behav, Imm 2007
Effect of mindfulness training on asthma quality of life and lung function: a randomized controlled trial

- Mindfulness training (MBSR) vs healthy living course (HLC)
- 8 weekly 2 ½ hr sessions
- Mindfulness training
  - Learning to recognize and discriminate between components of experience (including thoughts, feelings and sensations) and sensations (such as dyspnea)
  - Develop a nonreactive awareness of the experience and sensations
    - Meditation with focus on controlled breathing
    - Stretching to develop awareness during movement
- MBSR
  - Reduces perceived stress, disease related stress and symptoms
  - Practiced for 30 min/day for 6 days per week
Effect of mindfulness training on asthma quality of life and lung function: a randomized controlled trial
Effect of mindfulness training on asthma quality of life and lung function: a randomized controlled trial
Brief Behavioral Activation for Urticaria
Experimental Design (n=10)

- Open label, proof of concept study
- One time - one hour session
- Can be taught by nursing personnel
- Patients monitor their activity
- Increase number of pleasant activities
- Increase positive environmental interactions

Brief Behavioral Activation for Urticaria
Experimental Design (n=10)

VISIT #1
- Informed Consent obtained
- Patient Health Questionnaire
- Urticaria Activity Score (UAS), Urticaria Control Test (UCT)
- Depression Anxiety Stress Scale (DASS 21)
- Behavioral Activation for Depression Scale
  - Activation
  - Avoidance/Rumination
  - School/Work Impairment
  - Social Impairment
- 1-hour of behavioral activation training

AFTER VISIT
- 1 weekly motivational text message

VISIT #2 (4 weeks later)
- Repeat Questionnaires in Visit 1
Brief Behavioral Activation for Urticaria
URTICARIA CONTROL

UCT (p=0.016)

Visit 1: 5
Visit 2: 9

UAS (p=0.051)

Visit 1: 4
Visit 2: 2

Brabec and Marshall 2016
Brief Behavioral Activation for Urticaria

DEPRESSION

DASS-D

$p=0.027$

![Bar chart comparing DASS-D scores between Visit 1 and Visit 2.](chart1)

BADS-Avoidance/Rumination

$p=0.037$

![Bar chart comparing BADS-Avoidance/Rumination scores between Visit 1 and Visit 2.](chart2)

Brabec and Marshall 2016
Yoga Training Improves Quality of Life in Women with Asthma

- 12 yoga, 8 control (SOC) subjects
- Mild-to moderate asthma
- 10 wk (2x/wk for 1hr) yoga
- St George’s Respiratory Questionnaire give pre/post intervention
Case Report

- Follow up 1 month later
- Symptoms had essentially abated
  - Cough gone
  - Dyspnea resolved
  - Fatigue better but still having some trouble sleeping due to anxiety, depression, social struggle (not waking up or using SABA)
  - active in counseling, young adult church group
- Using medications as prescribed
- Repeat spirometry
  - FEV1 103%, FVC 104%, FEV1/FVC 92%
- Suggested to continue counseling, medications and begin AIT for tree, dust mites and cat
Integrative Approach to Allergy and Asthma Care

• Conventional Assessment
  - H&P
  - Review meds (CAM), diet, activity/exercise/lifestyle choices
  - Appropriate labs/procedures

• Psychological assessment
  - Underlying psychosocial stressors
  - Perceived stress, worry, anxiety, depression

• Spiritual assessment
  - Assessing meaningfulness, satisfaction with life
  - Looking for evidence of existential disturbance/crisis

• Construct comprehensive management program
  - Sensitive, respectful, nonjudgmental approach
  - Specific conventional/CAM interventions
  - Appropriate referrals
A happy heart makes the face cheerful, but heartache crushes the spirit.  
Prov 15.13

gmarshall@umc.edu