Questions

• Is there a scientific basis for TCM?
• How do we INTEGRATE TCM with conventional healthcare?
Systematic review and meta-analysis
Is it a viable solution?

Common conclusions
- Flawed methodology
- Heterogeneity
- Publication bias
- Need of randomized controlled trials
Challenges in searching for the BEST of TCM

- Lack of high quality evidence
- Non-English literature
- Individualized treatment (for both patients and physicians)
- Heterogeneity in herb combinations
A Different Paradigm!

**Modern Medicine**
Disease entities
Anatomical injury & Pathophysiology
3 main perspectives
  – Genetic makeup of host
  – Environmental factors including diet
  – Infective agents

**Chinese Medicine**
Holistic approach
Disease is caused by disharmony
5 main theories
  – Ying and Yang
  – 5 paths of energy
  – “Viscera” and syndromes
  – Qi & fundamental sub.
  – Meridians
“Using a Western ruler to measure Eastern distances”

<table>
<thead>
<tr>
<th>Unique aspect of TCM</th>
<th>Challenge to evaluation by conventional EBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCM diagnosis based on practitioner’s subjective assessment of patient’s state of disharmony, unlike technologically driven WM dx</td>
<td>RCT eligibility requires consistent diagnosis, traditionally based on WM diagnostic criteria</td>
</tr>
<tr>
<td>Individualized treatment based on TCM syndrome; treatment may vary by patient or by visit</td>
<td>Traditional RCTs involve treatment standardized to WM diagnosis</td>
</tr>
<tr>
<td>TCM involves complex array of treatments including (e.g. acupuncture, herbs, Tai Chi, etc…)</td>
<td>Traditional RCTs evaluate an isolated component (e.g. single drug), controlling for all non-specific effects</td>
</tr>
</tbody>
</table>
Individualized Treatment

Treatment for a single patient needs to be adjusted from time to time to fit the “syndrome”
Irritable Bowel Syndrome

Abdominal Pain

relieved by defecation

altered frequency

altered consistency
Rome II criteria (1999)

≥12 weeks of continuous or recurrent symptoms (in the preceding 12 months)

Abdominal pain/discomfort that has 2 of 3 features:

- relieved with defeation
  and/or
- associated with change in stool frequency
  and/or
- associated with change in form (appearance) of stool

Supportive symptoms:

- altered stool frequency
- altered stool form
  - lumpy/hard
  - loose/watery
- altered stool passage
  - urgency
  - incomplete evacuation
  - straining
- passage of mucus
- bloating or abdominal distension

Thompson et al, 1999
Serotonin (5-hydroxytryptamine): Potential Therapeutic Target for IBS?
Increased activity at Anterior Cingulate, Prefrontal Cortex, Insular Cortex & Thalmus

Mertz et al. Gastroenterol 2000
Do we have a common language?

Agreements among traditional Chinese medicine practitioners in the diagnosis and treatment of irritable bowel syndrome


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What does IBS mean among TCM practitioners?

**Phase I**
- Blinded consultation
  - 40 patients with IBS

**TCM Practitioners**
- 1 University in China
- 1 Northern China
- 1 Southern China
- 1 Hong Kong

**Phase II**
- Blinded consultation
  - 40 patients with IBS
  - 20 patients without IBS

**Learning**

**Diagnosis**

**Principle of treatment**

**Prescription**

Sung et al. APT 2004
辨証分型 (Diagnosis)
肝氣鬱結
脾氣虧虛
中焦濕阻
脾腎陽虛

治則 (Principle Of Treatment)
抑肝扶脾
健脾助肝
清熱祛濕
溫補脾腎

首選方劑 (Prescription)
痛瀉要方
參苓白朮散
葛根芩連湯
四神丸合附子理中湯
**Tong Xie Yao Fang (痛瀉要方): a promising formula for treatment of irritable bowel syndrome**

12 controlled trials (N=1125) on the effectiveness of TXYF in IBS symptom control
**Herbal medicine for digestive disorders**

<table>
<thead>
<tr>
<th>Tong Xie You Fang 痛瀉要方</th>
<th>Hemp Seed Pill 麻仁丸</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>He Zi</strong> 訶子</td>
<td><strong>Zhi Shi</strong> 枳實</td>
</tr>
<tr>
<td><strong>Bai Zhu</strong> 白朮</td>
<td><strong>Hou Po</strong> 厚朴</td>
</tr>
<tr>
<td><strong>Hou Po</strong> 厚朴</td>
<td><strong>Xing Ren</strong> 杏仁</td>
</tr>
<tr>
<td><strong>Bai Shao</strong> 白芍</td>
<td><strong>Bai Shao</strong> 白芍</td>
</tr>
<tr>
<td><strong>Yi Yi Ren</strong> 薏苡仁</td>
<td><strong>Da Huang</strong> 大黃</td>
</tr>
<tr>
<td><strong>Yan Hu Suo</strong> 延胡索</td>
<td><strong>Huo Ma Ren</strong> 火麻仁</td>
</tr>
<tr>
<td><strong>Huo Tan Mu</strong> 火炭母</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Irritable bowel syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemotherapy-related diarrhea</td>
</tr>
</tbody>
</table>

- **Qi Wei Bai Zhu Powder 七味白朮散**
  - **Fu Lin** 茯苓
  - **Ge Gen** 葛根
  - **Gan Cao** 甘草
  - **Bai Zhu** 白朮
  - **Ren Shen** 人参
  - **Mu Xiang** 木香
  - **Huo Xiang** 藿香

**Herbal medicine for digestive disorders**

- Irritable bowel syndrome
- Constipation
- Chemotherapy-related diarrhea
Combo therapy of Curcumin and Mesalamine is more effective in treating patients with mild-to-moderate ulcerative colitis.

50 patients with active mild-to-moderate ulcerative colitis who failed maximum treatment of mesalamine randomized to curcumin vs placebo as combo treatment with mesalamine.

<table>
<thead>
<tr>
<th>Outcome at 4 weeks</th>
<th>Curcumin</th>
<th>Placebo</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Curcumin</td>
<td>Placebo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3g capsule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=26</td>
<td>N=24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Remission</td>
<td>54%</td>
<td>0%</td>
<td>0.01</td>
</tr>
<tr>
<td>Clinical Response</td>
<td>65%</td>
<td>13%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Endoscopic Remission</td>
<td>43%</td>
<td>0%</td>
<td>0.043</td>
</tr>
</tbody>
</table>

Can Chinese herbal medicine be used as prebiotics?

Tong Xie Yao Fang

痛瀉要方

Gut microbiota composition and mucosal immune activation
When surgeons meet the acupuncturists......
Electroacupuncture Reduces Duration of Postoperative Ileus After Laparoscopic Surgery for Colorectal Cancer

SIMON S. M. NG, WING WA LEUNG, TONY W. C. MAK, SOPHIE S. F. HON, JIMMY C. M. LI, CHERRY Y. N. WONG, KELVIN K. F. TSOI, and JANET F. Y. LEE

Division of Colorectal Surgery, Department of Surgery, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong SAR

• ↓ Length of hospitalization
• ↓ Procedure cost
• Cost-effectiveness analysis underway
Meta-analysis: Efficacy of Acupuncture is not more effective than sham acupuncture

### 1. Symptom severity

<table>
<thead>
<tr>
<th>Study</th>
<th>Acupuncture Total</th>
<th>Sham acupuncture Total</th>
<th>Weight</th>
<th>Std. mean difference IV, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anastasi et al. (34)</td>
<td>12</td>
<td>15</td>
<td>9.9%</td>
<td>0.25 (−0.51, 1.01)</td>
</tr>
<tr>
<td>Forbes et al. (37)</td>
<td>22</td>
<td>29</td>
<td>18.6%</td>
<td>0.11 (−0.45, 0.66)</td>
</tr>
<tr>
<td>Lembo et al. (38)</td>
<td>78</td>
<td>75</td>
<td>56.7%</td>
<td>−0.21 (−0.53, 0.11)</td>
</tr>
<tr>
<td>Lowe et al. (42)</td>
<td>28</td>
<td>22</td>
<td>14.9%</td>
<td>−0.26 (−0.88, 0.36)</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>140</td>
<td>141</td>
<td>100.0%</td>
<td>−0.11 (−0.35, 0.13)</td>
</tr>
</tbody>
</table>

Heterogeneity: \( \tau^2 = 0.00; \chi^2 = 2.05, \text{ d.f.} = 3 (P=0.56); I^2 = 0\%

Test for overall effect: \( Z = 0.91 (P=0.36) \)

### 2. Quality of life

<table>
<thead>
<tr>
<th>Study</th>
<th>Acupuncture Mean</th>
<th>s.d.</th>
<th>Total</th>
<th>Sham acupuncture Mean</th>
<th>s.d.</th>
<th>Total</th>
<th>Weight</th>
<th>Std. mean difference IV, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbes et al. (37)</td>
<td>64.6</td>
<td>19.8</td>
<td>27</td>
<td>65.6</td>
<td>19.8</td>
<td>32</td>
<td>23.2%</td>
<td>−0.05 (−0.56, 0.46)</td>
</tr>
<tr>
<td>Lembo et al. (38)</td>
<td>73.1</td>
<td>17.3</td>
<td>78</td>
<td>73.8</td>
<td>17.6</td>
<td>75</td>
<td>60.6%</td>
<td>−0.04 (−0.36, 0.28)</td>
</tr>
<tr>
<td>Schneider et al. (44)</td>
<td>64</td>
<td>82.1</td>
<td>21</td>
<td>60</td>
<td>64.2</td>
<td>20</td>
<td>16.2%</td>
<td>0.05 (−0.56, 0.67)</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td>126</td>
<td></td>
<td>127</td>
<td></td>
<td></td>
<td>100.0%</td>
<td></td>
<td>−0.03 (−0.27, 0.22)</td>
</tr>
</tbody>
</table>

Heterogeneity: \( \tau^2 = 0.00; \chi^2 = 0.08, \text{ d.f.} = 2 (P=0.96); I^2 = 0\%

Test for overall effect: \( Z = 0.22 (P=0.83) \)
Acupuncture as an adjunct for IBS: An enhanced therapist-based placebo?

<table>
<thead>
<tr>
<th>Comparator</th>
<th>No. of studies</th>
<th>No. of subjects</th>
<th>Relative risk (95% C.I.) of improved IBS symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture Vs Medications</td>
<td>5</td>
<td>220 (control: 229)</td>
<td>1.28 (1.12-1.45)</td>
</tr>
<tr>
<td>Acupuncture + Chinese medicine Vs CM alone</td>
<td>4</td>
<td>284 (control: 182)</td>
<td>1.17 (1.02-1.33)</td>
</tr>
<tr>
<td>Acupuncture Vs psychotherapy</td>
<td>1</td>
<td>50 (control: 50)</td>
<td>1.05 (0.87-1.26)</td>
</tr>
<tr>
<td>Acupuncture + psychotherapy Vs psychotherapy</td>
<td>1</td>
<td>50 (control: 50)</td>
<td>1.2 (1.03-1.39)</td>
</tr>
<tr>
<td>Acupuncture Vs no specific treatment</td>
<td>2</td>
<td>87 (control: 94)</td>
<td>2.11 (1.18-3.79)</td>
</tr>
</tbody>
</table>

Manheimer et al. Am J Gastroenterol 2012
Electro-acupuncture leads to higher activation at R. insula and R. thalamus than sham acupuncture

- 30 IBS-diarrhea patients were randomized to true electroacupuncture or sham acupuncture
- Functional MRI done during rectal distension after acupuncture treatment

Acupuncture-mediated pain modulation in IBS by (1) modulation of serotonin pathway at insula and (2) modulation of mood and affective response at the pulvinar and medial nucleus of the thalamus

Chu et al. J Neurogastroenterol Motil 2012
Sham-controlled RCT for acupuncture treatment of IBS and generalized anxiety disorder

Comorbid non-depressed IBS + GAD patients

Real acupuncture
10 sessions

Sham acupuncture

IBS symptom
Anxiety symptom
Quality of life
Functional MRI

GV20 baihui 百會
Yintang 印堂
PC6 Neiguan 内關
HT 7 Shenmen 神門
LR3 Taichong 太沖

ST36
ST37
SP6

ST36
ST37
SP6
Acupuncture treatment for refractory functional dyspepsia

Functional dyspepsia patients who fail to have adequate symptom relief with proton pump inhibitor

- Real electro-acupuncture
- Sham acupuncture

10 sessions

- Dyspeptic symptom
- Anxiety and depressive symptom
- Quality of life
What are the unmet needs of our patients?

- Communication between TCM and Western physicians
- Combo treatment with monitoring of safety and herb-drug interaction
- TCM physicians with good credentials
A consumer-driven health-care system

Institute for Public Opinion in Allensbach

Germany survey 2005
772 subject interviewed

“If you were sick, would you prefer a therapy consisting of Western medicine or a combination of Chinese and Western medicine?”
Where is our patient load?

**Elderly**
- Musculo-skeletal pain e.g. OA knee, low back pain
- Dementia

**Chronic non-infectious diseases**
- Psychiatric disorders
- DM, Cardiovascular diseases
- Gastrointestinal problems
- Skin conditions

**Cancer**
- No effective chemotherapy
- As an adjuvant
Hong Kong Institute of Integrative Medicine

- Established in 2012 by CU Medicine, Hong Kong
- East-West Centre for Research and Education
- Integrative Medical Clinic
  - Clinical platform for research, education and practice of integrating TCM with conventional healthcare system
Choose the “right” place

Integrative Medical Clinic in Prince of Wales Hospital, teaching hospital of CU Medicine Hong Kong

• 140,000 hospital admissions and 710,000 outpatient visits/ year
• 4 Chinese FDA Clinical Trial Centres (Oncology, Digestive, Cardiovascular, Endocrine)
• Only National Cancer Institute Clinical Trial Centre in HK
• 3 National State Key Laboratories (Oncology, Digestive, Chinese Medicine)
Choose the “right” diseases

• Common, chronic or recurrent in nature
• No effective treatment,
• Serious side effects or high costs in conventional medicine
• Well accepted TCM treatment with high demand in the public
Registration requirements of proprietary Chinese medicine in HK

Product safety
- Heavy metals, pesticide residues, microbial, toxicity, mutagenicity, carcinogenicity, teratogenicity

Product efficacy
- Pharmacodynamics; clinical trial data

Product quality
- Manufacturing method; physiochemical properties of crude drugs; product specification, method and certificate of analysis; stability test reports
Other research in Integrative Medicine

Public health issues
- Jockey Club School of Public Health and Primary Care
- Policy, financing and healthcare delivery model

Branch of Cochrane Center on TCM and CAM
- Systematic reviews and meta-analysis

Basic science
- Drug mechanism and development
Education and training: Highlights

Postgraduate training in Chinese Medicine
- Clinical research methodology
- English speaking setting
- Overseas experience

Non-Chinese medicine streams
- MBChB, BSc (Public Health), BPharm

International networking
- Visiting scholarships
- Exchange program
- Conferences and workshop
Development of Integrative Medical Care

Stage 1
- Communication, transparency, safety monitoring
- Risk management, clinical governance and quality assurance

Stage 2
- Cross validation of Western and TCM diagnosis
- Pragmatic trials, outcome and cost-effectiveness research

Stage 3
- Evidence-based, protocol-driven diagnosis and management algorithm supported by pragmatic trials and outcome research
- Credentialing of training and qualification
Education in Integrative Medicine

- Mutual understanding and communication
- Elective clinical attachment for undergraduates of healthcare related disciplines and international exchange students
- Clinical research training for graduates of Chinese medicine
Integrating TCM with Modern Conventional Healthcare: Challenges

- Clinical governance
- Quality assurance
- Risk and safety management
- Liability
- Credentialing
- Sharing of patient records
- Reimbursement
Integration of Chinese Medicine and Western Medicine should not be a dream

- New tools to identify the best TCM
  - Microbiome studies
  - Pragmatic Trial
  - Clinical Outcome and Cost-effectiveness studies
- Modernized integrative model
  - Patient-centered
  - Practice of modern healthcare administration
  - Protocol-based approach