Prevalent Use of Complementary and Alternative Medicine (CAM)

• At least 42% of Americans use CAM (Eisenberg et al. N Engl J Med. 1993 Jan 28;328(4):246-52)

• 46% of medical doctors in Switzerland use CAM for themselves (Domenighetti et al Med Hyg 2000; 58:570-2)

• 80% of American women (age 45-60) use CAM for menopausal symptoms (Kang et al. Int J Gynaecol Obstet. 2002 Dec; 79(3):195-207)
**Human body**

- **Heart** ruler of all organs, in charge of blood circulation and mental activity. Cardiovascular and certain parts of higher nervous system.
- **Liver** "a viscus of temperament", stores blood, secretes bile, and controls muscles. Central nervous system and autonomous nervous system.
- **Spleen** transforms and transports nutrients and water, nourishing the muscles and limbs and determining the body’s constitution, protects the body against pathogens.
- **Digestive and immune system**, as well as the functional system in charge of energy and water metabolism.
- **Lung** respiration, controls vital energy and superficial body resistance, regulates circulation of body fluid. Respiratory system, part of immune system, also related to water metabolism.
- **Kidney**
  - Works to secrete urine, store essence of life, either inborn or acquired, in charge of reproduction, growth and development, replenishing the brain, nourishing the bones and producing marrow; helps the lung to inhale air.
  - Refers to the urogenital and endocrine system (particularly the pituitary-adrenal and pituitary and gonadal axes); part of immune system and higher nervous system.
Fundamentals of Chinese Medicine

- The material basis of the human body
  Qi, Blood, Jing, Jing-ye
- The pathways of the human body
  Meridians
Types of Qi and their origins

- Zong Qi (Gathering Qi)
  - Lungs process air
- Kong Qi (Air Qi)
  - Spleen process food
- Gu Qi (Grain Qi)
- Zong Qi Gathering Qi
- Yuan Qi (Original Qi)
- Zheng Qi (Normal Qi)
- Wei Qi (Defensive Qi)
- Ying Qi (Nutritive Qi)
- Zang Fu Zhi Qi Organ Qi
- Zheng Qi
- Wei Qi Defensive Qi
- Yuan Qi Original Qi
- Ying Qi Nutritive Qi
Clinical Guide

• Principle of diagnosis:
  Diagnosis of disease, syndrome differentiation (individualized treatment)

Methods:
  Inspection, Auscultation and Olfaction, Interrogation, Palpation

• Intervention modalities:
  Chinese medication, Acupuncture, Qigong, Tuina, Dietary
Acupuncture

an overview
Contents

- An insight into Acupuncture
- Indications
- Precautions
- Known biological effects of Acupuncture
- Acupuncture in the Treatment of Climacteric Symptoms
An insight into acupuncture

- Concept of
  - Yin Yang
  - Holism
  - Five element theory
  - Human body

- A view about the Qi
  - Formation of Qi
  - Function of Qi
  - Disharmony of Qi

- Meridian - the pathway of the body

- Technique and methods
Meridian - The pathway of the body

Components
- 12 regular meridians
- 12 collaterals
- 8 extraordinary meridians

Functions
- Connecting and coordinated creating an integral whole
- Transporting effects
Spleen Meridian
Technique and methods

- Manual (Classical) Acupuncture
- Electric Acupuncture
- Acupuncture and Moxibustion
- Laser Acupuncture
- Ultrasound Acupuncture
Indications

WHO formulated 43 different diseases which can be treated by Acupuncture in 1979

Journal of World Health Organisation Dec. 1979
Indications in Gynecology and Obstetrics

- Menstrual Disorders
  - Menorrhagia
  - Metrorrhagia
  - Dysmenorrhea
  - Dysfunctional uterine bleeding
  - Amenorrhea
  - Pre-menstrual syndrome

- Infertility
  - Ovulation induction
  - IVF + acupuncture
Indications continued

- Hyperemesis
  - hyperemesis gravidarum
  - post chemotherapy
- Breech presentation of the fetus (27-36 weeks)
- Relaxation during labor
- Postpartum
  - urinary retention
  - perineal pain
  - hemorrhage
  - retention of lochia
- Acute mastitis
- To promote lactation
- To inhibit lactation
- Menopausal symptoms
  - hot flushes
  - night sweats
  - irritability
  - insomnia
  - depression

Hou JL. In Acupuncture and Moxibustion therapy in gynecology and obstetrics. Beijing Sc. & Techn. 1995
Reviews: Acupuncture in male infertility

Modification of semen quality

Ovulation induction


Ovulation induction


Infertility


Analgesia in IVF

Anti-emetic

Breech presentation

Pain condition

Induction of labour

Known biological effects of acupuncture

- Acupuncture: multiple biological responses
  - Occur local or at distance mediated by sensory neurons. A focus of attention has been the role of endogenous opioids in analgesia and anesthesia.
  - The hypothalamus and pituitary activation results in a broad spectrum of systemic effects.
  - Alternation in secretion of neurotransmitters and neurohormones change in regulation of blood flow both centrally and peripherally.
  - Evidence of alternation of immune functions.
Known biological effects of acupuncture

- **Opioids**
  - Enkephalins
  - β-Endorphin
  - Dynorphins

- **Tachykinin peptides**
  - Substance P
  - Neurokinine A

- **Gastrins**
  - Cholecystikinin (CCK)
  - Gastrin

- **Others**
  - Somatostatin (SRIF)
  - Neuropeptide Y
  - Galanin
  - Calcitonine Gene-related Peptide (CGRP)
  - Vasoactive intestinal peptide (VIP)
Acupuncture in the Treatment of Climacteric Symptoms
Does "One size fits all"?
Reluctant to HRT

- Undesirable side effects (WHI)
- Convinced that HRT is not natural or physiological
## Percentage of women being given HRT in six European countries

<table>
<thead>
<tr>
<th></th>
<th>West Germany</th>
<th>Great Britain</th>
<th>France</th>
<th>Italy</th>
<th>Denmark</th>
<th>The Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenopause</td>
<td>9</td>
<td>8</td>
<td>13</td>
<td>12</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Perimenopause</td>
<td>44</td>
<td>9</td>
<td>28</td>
<td>9</td>
<td>12.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Postmenopause</td>
<td>25</td>
<td>6</td>
<td>8</td>
<td>3</td>
<td>12.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>7</td>
<td>12</td>
<td>3</td>
<td>12.3</td>
<td>3.6</td>
</tr>
</tbody>
</table>

A study on the use of medication for climacteric complaints in western Europe

*II. Oddens et al. Maturitas 1994 May;19(1):1-12*
Etiology of Menopause in TCM

- Gradual weakening of the kidney with age
- Emotional stress: Worry, anxiety and fear lead to decline the kidney yin
- Intemperate sexuality
- Overwork, irregular diet, loss of blood
- Too many children, too close together
Syndromes Differentiation

1. Deficiency of kidney yin
2. Deficiency of kidney yang
3. Deficiency both the kidney yin and yang
Reviews: acupuncture and menopause

- In rat model, EA inhibits the decrease in brain catecholamine contents, improves the memory loss and decrease of immune responses accompanying aging
  

- In adult rats mode, EA increases calcitonin gene-related peptide concentrations in the nervous system
  

- Does not alter blood pressure or serum lipids for hypertensive postmenopausal women
  
Study I

The Effects of Acupuncture on the Quality of Life and Reproductive Hormonal Levels in Menopausal Women

Objective
To assess the effects of acupuncture on the quality of life and reproductive hormonal secretion in menopausal women.

Design
A pilot study comparing changes in the quality of life and reproductive hormones in menopausal women.

Patients and Methods
Eleven menopausal women suffering from vasomotor symptoms and who had no HRT during the previous six months entered into this study (metabolic, thromboembolic, renal or endocrine disease are excluded).
Main outcome measure

A change in the Menopause-specific quality of life questionnaire and Reproductive hormone levels

- Menopause-specific quality of life questionnaire (MENQOL)
  a) vasomotor symptoms
  b) psychosocial symptoms
  c) physical symptoms
  d) sexual symptoms
Measured Reproductive Hormone

- Follicular stimulating hormone (FSH)
- Luteinizing hormone (LH)
- Estradiol ($E_2$)
- Progesterone (Prog)
- Prolactin (Prl)
Acupuncture treatment

- Classical manual acupuncture was applied and the choice of acupuncture points was chosen according to syndrome diagnosis.

- The depth of the inserted needles (sterilized and disposable) in accordance with the rules of TCM and as confirmed by «De qi».

- Two sessions a week for five consecutive weeks. The duration of each session was about 30 minutes.
# Acupuncture points and their anatomical position used for needle insertion

<table>
<thead>
<tr>
<th>Points</th>
<th>Meridians</th>
<th>Localization</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tai-xi (KI 3)</td>
<td>Kidney meridian</td>
<td>Between the medial malleolus and tendo calcaneus</td>
<td>Menopausal symptoms</td>
</tr>
<tr>
<td>San-yin-jiao (SP 6)</td>
<td>Spleen meridian</td>
<td>Lower leg, medial side of the tibia</td>
<td>Menopausal symptoms</td>
</tr>
<tr>
<td>Shen-shu (BL 23 )</td>
<td>Bladder meridian</td>
<td>Lumbar part of the back</td>
<td>Menopausal symptoms, Sweats, libido</td>
</tr>
<tr>
<td>Da-zhui (GV 14)</td>
<td>Governor Vessel</td>
<td>Below the spines process of the seventh cervical vertebra</td>
<td>Hot flashes</td>
</tr>
<tr>
<td>Feng-chi (GB 20)</td>
<td>Gallbladder meridian</td>
<td>At the lateral of cervical</td>
<td>Hot flashes, Depression</td>
</tr>
<tr>
<td>Fu-liu (KI 7)</td>
<td>Kidney meridian</td>
<td>Lower leg, medial side</td>
<td>Sweats</td>
</tr>
<tr>
<td>Zu-san-li (ST 36)</td>
<td>Stomach meridian</td>
<td>Lower leg, at the anterior and lateral to the tibia</td>
<td>Fatigue, digestive disturbance</td>
</tr>
<tr>
<td>Qi-hai (CV 6)</td>
<td>Conception meridian</td>
<td>On the middle line of the abdomen, below the umbilicus</td>
<td>Fatigue</td>
</tr>
<tr>
<td>Da-ling (PC 7)</td>
<td>Pericardium meridian</td>
<td>In the middle of the transverse crease of the wrist</td>
<td>Palpitation, Insomnia</td>
</tr>
<tr>
<td>Shen-men (HT 7)</td>
<td>Heart meridian</td>
<td>At the ulnar side of the wrist</td>
<td>Insomnia</td>
</tr>
<tr>
<td>Tai-chong (LR 3)</td>
<td>Liver meridian</td>
<td>Dorsum pedis, between the first and second metatarsal bones</td>
<td>Depression</td>
</tr>
</tbody>
</table>
Changes of quality of life scores from pre-treatment (baseline) to the end of the treatment and 3 months after the end of treatment (follow-up)

<table>
<thead>
<tr>
<th>Domain score</th>
<th>Baseline score</th>
<th>End of the treatment minus baseline (n=11)</th>
<th>3 months follow-up after treatment minus baseline (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean change ± S.D.</td>
<td>95 % confidence interval</td>
<td>p-value</td>
</tr>
<tr>
<td>Physical</td>
<td>2.4</td>
<td>-0.79 ± 0.89</td>
<td>-1.39 to -0.19</td>
</tr>
<tr>
<td>Vasomotor</td>
<td>4.2</td>
<td>-2.24 ± 1.7</td>
<td>-3.38 to -1.1</td>
</tr>
<tr>
<td>Psychosocial</td>
<td>2.04</td>
<td>-0.75 ± 1.2</td>
<td>-1.55 to 0.53</td>
</tr>
<tr>
<td>Sexual</td>
<td>2.27</td>
<td>-0.24 ± 1.01</td>
<td>-0.92 to 0.43</td>
</tr>
</tbody>
</table>
Vasomotor domain score assessed by MENQOL questionnaire
The Effects of Acupuncture on Reproductive Hormone Levels

<table>
<thead>
<tr>
<th></th>
<th>Mean value before and after treatment</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>before</td>
<td>after</td>
</tr>
<tr>
<td>FSH (mUI/ml)</td>
<td>80.3 ± 11.4</td>
<td>73.5 ± 13.9</td>
</tr>
<tr>
<td>LH (mUI/ml)</td>
<td>48.0 ± 6.6</td>
<td>41.3 ± 8.9</td>
</tr>
<tr>
<td>E2 (pg/ml)</td>
<td>46.1 ± 24.6</td>
<td>41.8 ± 17.2</td>
</tr>
<tr>
<td>Prl (ng/ml)</td>
<td>10.8 ± 1.7</td>
<td>11.5 ± 1.8</td>
</tr>
<tr>
<td>Prog (ng/ml)</td>
<td>0.3 ± 0.0</td>
<td>0.2 ± 0.0</td>
</tr>
</tbody>
</table>
Summary

Acupuncture significantly improved menopausal vasomotor and physical symptoms, did not change psychosocial or sexual symptoms, nor follicular stimulating hormone (FSH), luteinizing hormone (LH), estradiol, prolactin or progesterone secretion.
Study II

The Effects of Acupuncture on Quality of Life, Serum Levels of Serotonin in Menopausal Women
Patients and Method

After written consent and recruitment, 36 participants were randomly assigned to EA or MA, by opening opaque, serially numbered envelopes containing a code A (for EA) or B (for MA) determined by computer-generated random numbers and opened the envelopes immediately before the first acupuncture session. Three women were excluded from this study, two because of insufficient compliance in completing the questionnaire, and one for whom it was too difficult to collect a serum sample. The remaining 33 women had a median age of 55.0, ranging from 45 to 72 years.
The effects of acupuncture on menopause quality of life assessment

<table>
<thead>
<tr>
<th>Domains</th>
<th>Vasomotor Mean ± SD</th>
<th>Psychosocial Mean ± SD</th>
<th>Physical Mean ± SD</th>
<th>Sexual Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>5.1 ± 0.9</td>
<td>2.4 ± 1.3</td>
<td>2.7 ± 1.2</td>
<td>2.2 ± 2.0</td>
</tr>
<tr>
<td>Mid-treatment</td>
<td>3.3 ± 1.4*</td>
<td>1.7 ± 1.1*</td>
<td>2.1 ± 1.0*</td>
<td>1.9 ± 1.7*</td>
</tr>
<tr>
<td>End of treatment</td>
<td>2.1 ± 1.5*</td>
<td>1.3 ± 0.8*</td>
<td>1.6 ± 0.9*</td>
<td>1.5 ± 1.6*</td>
</tr>
<tr>
<td>EA Baseline</td>
<td>5.3 ± 0.8</td>
<td>2.4 ± 1.1</td>
<td>2.9 ± 1.0</td>
<td>2.4 ± 2.2</td>
</tr>
<tr>
<td>EA Mid-treatment</td>
<td>3.6 ± 1.8*</td>
<td>1.6 ± 0.8*</td>
<td>2.3 ± 1.1*</td>
<td>2.2 ± 1.9‡</td>
</tr>
<tr>
<td>EA End of treatment</td>
<td>2.5 ± 1.9*</td>
<td>1.3 ± 0.7*</td>
<td>1.8 ± 0.9*</td>
<td>2.0 ± 2.0</td>
</tr>
<tr>
<td>MA Baseline</td>
<td>5.0 ± 0.9</td>
<td>2.3 ± 1.5</td>
<td>2.6 ± 1.2</td>
<td>2.1 ± 1.9</td>
</tr>
<tr>
<td>MA Mid-treatment</td>
<td>3.2 ± 1.2*</td>
<td>1.8 ± 1.2*</td>
<td>2.0 ± 0.9*</td>
<td>1.8 ± 1.7*</td>
</tr>
<tr>
<td>MA End of treatment</td>
<td>1.9 ± 1.1*</td>
<td>1.3 ± 0.8*</td>
<td>1.6 ± 0.9*</td>
<td>1.2 ± 1.4*</td>
</tr>
</tbody>
</table>

Results were presented as Mean ± SD. *: p<0.001, ‡: p=0.001 (treatment vs. baseline, matched paired t-test)
The distribution of the value of serum serotonin at baseline
The effects of EA on serum serotonin levels

Results were presented as Mean ± SD. °: $p > 0.05$, Wilcoxon Signed Ranks Test, n= 11. (The samples with baseline >1000nmol/l were excluded)
The effect of MA on serum serotonin level

Results were presented as Mean ± SD. *: p < 0.05, **: p ≤ 0.01, Wilcoxon Signed Ranks Test, n= 18 (The samples with baseline >1000nmol/l were excluded)
Conclusions

Acupuncture could significantly decrease vasomotor symptoms and improve the quality of life for menopausal women.

These effects may be due to the increases in the secretion of serotonin and β-EP through the stimulation of acupuncture.

Because acupuncture is nontoxic and relatively affordable, it could be an alternative for women who do not want or can not use HRT for climacteric symptoms.