Traditional Medicine and Dementia

Professor Ching-Liang Hsieh, M.D., Ph.D
China Medical University & Hospital
Taichung, Taiwan
Outline

1. Basic theory of Traditional Chinese Medicine (TCM)
2. Theory and treatment of Dementia in TCM
3. Modern study of anti-dementia traditional herbs
4. Acupuncture treatment of dementia
5. Conclusion
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1. Basic theory of Traditional Chinese Medicine (TCM)
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1. **Correspondence between nature and human (tian ren xiang ying 天人相應):** humans are in adaptive conformity with the natural environment.

2. **Holism (zheng ti guan nian 整體觀念):** human body as an organic whole, which integrated with external environment. (WHO, Western Pacific region)

3. **Symptomatic medicine (zheng zguang yi xue 症狀醫學):** TCM originate from symptom and sign, and that is so called visceral manifestation (zang xiang 臟象), therefore, the symptom and sign is the most import part of TCM.

4. **Visceral manifestation (zang xiang 臟象):** the outward manifestation of internal organs through which physiological functions as well as pathological changes can be detected and states of health appraised. (WHO, Western Pacific region)
Basic theory of TCM (2/2)

1. **Judging the inside from observation of the outside (司外揣内)**: making judgment on the condition inside the body based on the signs observed from the outside. (WHO, Western Pacific region)

2. **Five viscera (五脏):** heart, liver, spleen, lung and kidney to coordinate Huangdi Neijing (黃帝內經) → the number is five in the universe.

3. **Five visceral theory (五臟論):** all organs and functions of the human body can be assigned to five systems: heart, liver, spleen, lung and kidney, and the each location also divided into five parts to corresponds five viscera. For example

   - Eye and tendon → liver; ear and bone → kidney; nose and skin → lung; mouth, lip and muscle → spleen; tongue and blood vessel → heart.
Five systems play different cognitive function

1. Heart system: the heart accounts for consciousness and taste.
2. Liver system: the liver is mainly in charge of mood and vision.
3. Spleen system: the spleen is in charge of tactile perception.
4. Lung system: the lung is responsible for olfactory discrimination.
5. Kidney system: the kidney’s main cognitive function comprises memory and hearing.
Seven body orifices (qi qiao 七竅) are correspondence to five system

- Seven body orifice: eyes, ears, nose, tongue, oral cavity and lips.
- Function of seven body orifices: as a gates to cognize outer environment, i.e. cognitive functions.
  1. Liver system → eyes → color discrimination (visual cognition)
  2. Heart system → tongues → taste discrimination (taste cognition).
  3. Spleen system → oral cavity and lips → tactile discrimination (tactile cognition).
  4. Lung system → nose → olfactory discrimination (olfactory cognition).
  5. Kidney system → ear → sound discrimination (hearing cognition).
The theory of Six Qi (liu qi 六氣)

◆ Six Qi: Essence (jing 精), Qi (qi 氣), Fluid and Humor (jin yi 津液), blood (xie 血) and blood vessel (mai 脈)

1. Essence (jing 精): the fundamental substance in each organ or tissue or functional unit such as renal glomerulus.

2. Qi (qi 氣): Function of each organ or tissue, such as heart contraction or filtration of renal glomerulus.

3. Fluid and Humor (jin yi 津液): body fluid.

4. Blood (xie 血), and blood vessel (mai 脈): supply blood and nutrition to organ or tissue.
The pathological manifestation of Six Qi

- Essence (jing 精): essence deficiency (jing kui 精虧), such as deficiency of kidney essence produces importance, poor memory, and development delay etc.

- Qi (qi 氣): qi deficiency (qi xu 氣虛), qi counterflow (qi ni 氣逆), qi fall (qi xian 氣陷), qi stagnation (qi zhi 氣滯), qi block (qi bi 氣閉), qi collapse (qi tuo 氣脫)

- Fluid and Humor (jin yi 津液): phlegm (tan 痰), rheum (tin 飲)

- Blood (xie 血): blood stasis (xie yu 血瘀)
Blood (Spirit Qi, 神氣) Initiator

◆ Physiological state:
1. Liver (eye) obtain blood can see
2. Feet obtain can walk
3. Palm obtain blood can hold
4. Hand obtain blood can fetch

◆ Pathological state
1. Apraxia
Diagnosis and treatment of TCM

Four examination (si zhen 四診)
Inspection (wang zhen 望診)
Listening and smelling examination (wen zhen 聽診)
Inquiry (wen zhen 問診)
Palpitation (qie zhen 切診)

Eight principle (ba quang 八綱)
Yin and Yang (yin yang 阴阳)
Exterior and interior (biao li 表裏)
Cold and heat (han re 寒熱)
Deficiency and excess (xu shi 虚实)

Pattern identification and treatment
(bian zheng lun zhi 辨证論治)
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Cardinal form and clinical manifestation of dementia

◆ Cardinal form of dementia
1. Alzheimer’s disease (AD)
2. Vascular dementia (VD)
3. According to the theory of TCM is no distinction between AD and VD.

◆ Cardinal clinical manifestation of dementia
1. Progressive decline of memory
2. Disturbance of cognition function
3. Affective disturbance
4. Personality changes
Disturbance of cognitive function and memory function

1. **Disturbance of memory**: kidney is in charge of memory. In consistence with this theory, memory decline appears due to kidney essence deficiency and treatment therefore aims at tonifying the kidney.

2. **Disturbance of cognitive function**: If any of these orifices is blocked, such as phlegm turbidity it will cause disturbance of cognitive function. Therefore, treatment consists of dispelling phlegm and opening the orifices, e.g. using herbs like *Acorus tatarinowii* Schott (*shi chuang pu* 石菖蒲).
Clinical manifestation of qi stagnation, blood stasis and phlegm

1. Qi: qi stagnation (qi zhi 氣滯), disturbance of qi flowing motion---distention or pain in the affected part.

2. Blood: blood stasis (xie yu 血瘀)---night pain, sting pain, or tumor mass, or black purple color.

3. Phlegm (tan 痰) and retained fluid (yin 飲): pathological product of water, such as edema, phlegm etc.
Etiology of Dementia in TCM

◆ Progressive decline of memory
1. Kidney: deficiency of kidney essence (shen jing kui xu 腎精虧虚)

◆ Disturbance of cognitive function
1. Kidney: deficiency of kidney essence (shen jing kui xu 腎精虧虚)
2. Spleen: deficiency of spleen produces phlegm (pi xu sheng tan脾虛生痰)

◆ Affective disturbance
1. Liver: liver depression disharmony (gan yu bu shu 肝鬱不舒)

◆ Personality changes
1. Heart: failure of heart to be nourished (xin shi suo yang 心失所養)
Deficiency of kidney essence (腎精虧虛):
2. Tonify the kidney yin (補腎陰): Corni Fructus (山茱萸), dried/fresh Rehmanniae Radix (生地黃).
3. Tonify the kidney yang (補腎陽): Epimedii Herba (淫羊藿), Cistanches Herba (肉蓯蓉).

Liver depression disharmony (肝鬱不舒):
1. Soothe the liver and regulate qi (舒肝理氣): Free Wander Powder (逍遙散) etc.

Deficiency of spleen (脾虛):
1. Tonify the spleen (補脾): Ginseng Radix (人參), Astragalus Radix (黃耆), Codonopsis Radix (黨參), Atractylodes macrocephala Rhizoma (白朮), Poria (茯苓) etc.
Treatment of dementia in TCM (2/2)

◆ Deficiency of Heart Qi-blood (xin qi xie xu 心氣血虛)

1. Replenish qi and nourish the heart (yi qi yang xin 益氣養心): Ding-ehih wan (ding zhi wan 定志丸) or Kai-xin san (kai xin san 開心散), Ginseng Radix (ren shen 人參), Poria (fu ling 茯苓), Polygala tenuifolia Willd (yuan zhi 遠志), Acorus tatarinowii Schott (shi chuang pu 石菖蒲).

◆ Phlegm-blood stasis obstructing the orifices (tan yu zi qiao 痰瘀阻竅):

1. Sweeping phlegm and opening the orifices (huo tan kai qiao 豁痰開竅): Polygala tenuifolia Willd (yuan zhi 遠志), Acorus tatarinowii Schott (shi chuang pu 石菖蒲), Curcuma root (yu jin 鬱金) etc.

2. Resolve blood stasis and free the collateral vessels (化瘀通絡): Persicae Semen (tao ren 桃仁), Chuanxiong Rhizoma (chuan xiong 川芎), Angelicae Sinensis Radix (dang gui 當歸), Notoginseng (san qi 三七).
Treatment of amnesia in TCM recordings

◆ Zhengzhizhunsheng Wong Kentoang 王肯堂.《證治準繩》

1. Kong sheng zhen fang (孔聖枕中方):
   ➢ Composition: Carapax Et Plastrum Testudinis (gui jia 龜甲), Fossilizid (Drgon'sBone long gu 龍骨), Polygala tenuifolia Willd (yuan zhi 遠志), Acorus tatarinowii Schott (shi chuang pu 石菖蒲):
   ➢ Action: enhancing intelligence.

2. Duo wang fang (多忘方)
   ➢ Composition: Polygala tenuifolia Willd (yuan zhi 遠志), Acorus tatarinowii Schott (shi chuang pu 石菖蒲), Ginseng Radix (ren shen 人参), Poria (fu ling 茯苓), Poria cocos(Schw.) Wolf. (fu shen 茯神)
   ➢ Action: enhancing memory.

3. Polygala tenuifolia Willd (yuan zhi 遠志), Acorus tatarinowii Schott (shi chuang pu 石菖蒲): do not forget.

4. Polygala tenuifolia Willd (yuan zhi 遠志) treats confusion, amnesia.

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The most frequently used Chinese herbs for forgetfulness in TCM recordings (1/2)

- **Polygala tenuifolia Willd** *(yuan zhi 遠志)*
  1. open nine orifices, bright ears and eyes and enhancing intelligence in TCM recordings
  2. Inhibit extracellular levels of both Aβ 1-40 and Aβ 1-42.
  3. Arresting β-secretase-like proteolytic activities to decrease the APP C99 fragment.
  4. Promotion of neural stem cell proliferation and differentiation of hippocampus CA1 region.
  5. Decreasing the activities of acetylcholinestase
  6. Inducting long term potentiation
The most frequently used Chinese herbs for forgetfulness in TCM recordings (2/2)

◆ **Acorus tatarinowii Schott (shi chuang pu 石菖蒲):**
  1. open nine orifices, bright ears and eyes and enhancing intelligence in TCM recordings
  2. Resuscitation after coma
  3. The components of α-asarone and β-asarone are neuroprotection against neuronal damage in cerebral ischemia induced by middle cerebral artery occlusion.
  4. Anti-oxidant.

◆ **Poria cocos(Schw.) Wolf. (fu shen 茯神)**
  1. Enhancing intelligence, treating amnesia and easy forgetfulness.
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Using often Chinese herbs in treating dementia

◆ Gastrodiae Rhizoma (tian ma 天麻)

1. Gastrodiae Rhizoma may treat absent-minded, spasm, vertigo and epileptic seizure in TCM writings.
2. Anti-oxidation and neuroprotection in our previous study.
3. No evidence to support Gastrodiae Rhizoma can improve cognitive function in patients with vascular dementia in our randomized, double blinded, placebo controlled study.
Ginseng Radix (ren shen 人參)

1. Bu qì, increasing intelligence and memory in TCM recordings.
2. Ginseng Radix can protect memory impairment in vascular dementia rat model.
3. Neuroprotection: Ginsenosides can decrease Aβ1-42 protein expression; Ginsenosides have protective effects on memory via antiapoptosis in vascular dementia rat model.
4. Anti-amnestic effect: Ginsenoside Rg1 can improve learning and memory.
5. No strong evidence to support that Korean red ginseng improved cognitive function in a clinical trial of 61 patients with AD (24 male, 37 female). Heo et al., European J. Neurol, 2008.
EGb761

1. The phytopharmaceutical Ginkgo biloba most frequently prescription in German for CAM treatment of dementia.

2. EGb761 is extracted from dried Ginkgo biloba


4. Anti-cholinesterase and anti-dementia properties in scopolamine mouse model.

5. Treating dementia, cardiovascular and cerebrovascular disease in clinical use.

6. A cochrane systematic review (9 trials, 2372 patients, and trial from 12 to 52 weeks) do not support the use of EGb761 in dementia treatment.

7. Several reports also suggested that EGb761 was not effective in reducing the incidence of AD or is beneficial for memory impairment in patients with dementia or aging.
Lycii Fructus (gou qi zi 枸杞子)

1. **Lycii Fructus (gou qi zi 枸杞子):** Tonify kidney (補腎), emolliate the liver (養肝), enhancing vision (明目), prolong life span (令人長壽)—Li Shizhen Bencaogongmu,李時珍本草綱目

2. Anti-aging.

3. Attenuated Aβ peptide induced neuronal apoptosis

4. Protected neurons against glutamate toxicity, suggesting that it might slow down dementia progression

5. Protected neurons against homocysteine toxicity where hyperhomocysteinaemia is a risk factor for AD
Polygoni Multiflori Radix (he shou wu 何首烏)

1. The root of Polygonum multiflorum Thunb.
2. Prolonged life span, and anti-aging in TCM recordings.
4. Cardiovascular protection
5. Anti-oxidation properties
6. Protect the brain against focal cerebral ischemia
7. Prevent cognitive deficits
8. Promote learning and enhance memory
Huperzine A

1. Huperzine A is a alkaloid component isolated from Huperzia serrata (*qian ceng tan* 千層塔, 蛇足草, 金不換):
   ---relief pain, antidote and alleviation swelling

2. **Anti-AChE activity**
   ---Improved cognitive functions of patient multiple infarction dementia: randomized, double blind, placebo –controlled study.

3. **Reduce the formation of Aβ peptides:**
   ---beta-amyloid (Aβ) peptide and hyperphosphorylated tau protein as components of extracellular senile plaques

4. **Anti-oxidative effects**
   ---protect neurons against hydrogen peroxide and Aβ-induced oxidative damages
Curcuma root (yu jin 鬱金)

◆ Yu jin can treat blood disease in TCM recording.
◆ Curcumin: a component of Yu jin
1. Anti-oxidation (reducing reactive oxygen species and increasing superoxide dismutase (SOD)---anti-aging.
2. Anti-inflammation (through inhibiting nuclear factor-kappa B signaling pathway)
3. Inhibiting lipid peroxidation
4. Curcum can mediate via form aluminum ion (AlIII)-curcumin complex to block Al(III)-induced Aβ42 fibrillation and neurotoxicity in PC12 cells (Jiang et al., 2012, Biochimica et Biophysica Acta).
5. Oral curcumin treating AD, 24-week randomized, double-blind, placebo-controlled clinical trial shows no clinical or biochemical evidence to support that curcumin is efficacy for AD treatment (Ringman et al., 2012, Alzheimer’s Research & therapy).
Astragalus Radix (*huang qi* 黃耆)

1. Huang qi can tonify qi, and qi can push blood mobile in the theory of TCM.
2. Huang qi is a major Chinese herbs for treatment of stroke in Taiwan.
3. Anti-oxidant
4. Astragalus mongholicus can reverse Aβ (25-35) induced memory loss, and also can prevent axon and synapse loss in the cerebral cortex and hippocampus in mice. In addition, Astragalus mongholicus can enhance axonal regeneration, reconstruction of neuronal synapse and prevents Aβ (25-35)-induced neuronal death.  

(Tohda et al., British J. of Pharmacol. 149: 532-541, 2006.)
Salviae Miltiorrhizae Radix (dan shen 丹参)

1. Dan shen has activate blood and resolve stasis (huo xue hua yu 活血化瘀) action in TCM.
2. According to the theory of TCM, the body is duo xu duo yu in aging (老人多虚多瘀).
3. Dan shen can reduce cerebral infarction area and neurological deficit, and also can reduce oxygen free radicals in middle cerebral artery occlusion rat in our previous studies.
4. Anti-inflammation
5. Inhibiting the express of pro-inflammatory cytokine.
6. Anti-acetylcholinesterase activities.
Paeonol

1. A active component of both Moutan cortex of Paeonia suffruicosa Andrews (mu dan pi 牡丹皮) and the root of Paeonia lactiflora P all (chi shao yao 赤芍药).
2. Paeonol can reduce cerebral infarction volume in transient middle cerebral artery occlusion rat (tMCAo).
3. Paeonol down-regulates H2O2-induced nuclear factor-κ B (NF-κB) and NF-κB-associated amyloid precursor protein (APP) expression.
4. Anti-inflammation.
5. Paeonol can recover the step-through latency in the retrieval test 7 days after tMCAo.
6. Paeonol also can reduce level of APP-and beta site APP cleaving enzyme (BACE; β-secretase) and apoptosis 7 days after tMCAo.
Effect of paeonol on step-through latency in retention trial 7 days after tMCAo (n=12)

**p < 0.05 compared to sham; ##p < 0.05 compared to vehicle
Effect of paeonol on APP in the hippocampus 7 days after tMCAo (n=6)

Arrow = APP immuno-positive cell; ***p < 0.001 compared to vehicle
Effect of paeonol on APP in the ischemic cortex 7 days after tMCAo (n=6)

Arrow = APP immuno-positive cell; *p < 0.05 compared to vehicle
Effect of paeonol on BACE in the ischemic cortex 7 days after tMCAo (n=6)

Arrow = BACE immuno-positive cell; ***p < 0.001 compared to vehicle
Effect of paeonol on apoptosis in the ischemic cortex 7 days after tMCAo (n=6)

Arrow = TUNEL-positive cell; **p < 0.01, ***p < 0.001 compared to vehicle
Yokukansan (yu gan san 抑肝散)

◆ **Composition:**

- Angelicae Sinensis Radix (dang gui 当歸), Atractylodes macrocephala Rhizoma (bai zhu 白朮), Poria (fu ling 茯苓), Uncariae Ramulus cum Uncis (gou teng 鉤藤), Chuanxiong Rhizoma (chuan xiong 川芎), Bupleuri Radix (chai hu 柴胡), Glycyrrhiza Radix (gan cao 甘草).

◆ Improved the behavioral and psychological symptoms of fronto-temporal dementia (BPSD, 20 patients, 4 weeks) or chronic renal failure with hemodialysis dementia (11/12 patients with 4 weeks trial).

- aggression, agitation, screaming, wandering, hallucinations and delusions, disinhibition, aberrant behavior etc.

◆ Positive effects of Yokukansan on sleep disturbance

◆ Modulate the glutamatergic neurotransmitter system, glutamate reuptake by astrocytes
Yi-Chi-Tsung-Ming-Tang (益氣聰明湯)

1. **Composition:** Astragalus Radix (huang qi 黃耆), Ginseng Radix (ren shen 人参), Puerariae Radix (ge gen 葛根), Paeoniae Radix Alba (bai shao yao 白芍藥), Phellodendri cortex (huang bai 黃柏), Viticis fructus (ma jing zi 蔓荊子), Cimicifugae Rhizome (sheng ma 升麻) and Glycyrrhiza Radix (gan cao 甘草).

2. Decreasing amyloid accumulation and reversed reduced acetylcholne in amyloid-β (Aβ 1-40) injection induced learning and memory impairment in rat.

Yeh et al., eCAM doi:10.1155/2012/414436
Strong anti-acetylcholinesterase activities in Traditional Chinese herbs

1. Salviae Miltiorrhizae Radix (dan shen 丹参)
2. Polygoni Multiflori Radix (he shou wu 何首烏)
3. Paeoniae Radix Rubra (chi shao yao 赤芍薬)
4. Paeoniae Radix Alba (bai shao yao 白芍薬)
5. Rhei Radix et Rhizoma (da huang 大黃)
6. Spatholobi Caulis (ji xue teng 雞血藤)

Possible anti-dementia mechanism of Traditional Chinese herbs

1. Anti-inflammation,
2. Anti-oxidation
3. Anti-AChE activity
4. Reducing the formation of amyloid-β
European medicine

- Artemisia absinthium (Wormwood 苦艾)
  1. To restore declining mental function and improved memory in European and Pakistan.
  2. Artemisia absinthium has acetylcholine receptor activity including nicotinic and muscarinic binding in CNS. (Wake et al., Journal of Ethnopharmacology, 2000)
  3. Anti-oxidant properties such as prevent attenuation of glutathione (GSH), superoxide dismutase (SOD) and catalase (CAT) in ischemia-reperfusion injured rat. (Singh Bora and Sharama, Journal of Ethnopharmacology, 2010)
Melissa officinalis (Lemon balm 檸檬香蜂草)

1. Melissa officinalis has acetylcholine receptor activity including nicotinic and muscarinic binding in CNS. (Wake et al., Journal of ETHNOPHARMACOLOGY, 2000)

2. A total of 42 mild to moderate AD (male 24, female 18; 21 patient in each group; 35 patients complete trial 20/15) are studied. Double-blind, randomized, placebo controlled trial, three centres of Tehran, Iran. Melissa officinalis extract or placebo 60 drops/day for four months. The results indicated that Melissa officinalis group has better outcome on ADAS-cog and CDR-SB) than control, and also produced a beneficial effect on agitation. {Akhondzadeh et al., J Neurol Neurosurg Psychiatry, 2003}
Salvia lavandulaefolia (Spanish sage 西班牙鼠尾草) and Salvia officinalis (common sage 鼠尾草屬植物)

1. A number of the family Lamiaceae, and the Native is the Mediterranean.
2. Anti-oxidant.
4. Rosmarinic acid: inhibit formation of Aβ.
5. A 20 healthy volunteers (female 18, male 2), simple word recall study: Salvia lavandulaefolia can enhance memory in healthy young adults, and this effect is dose-dependent manner. (Tildesley et al., Pharmacology, Biochemistry, and Behavior, 2003)
6. A total of 39 mild to moderate AD (male 24, female 15; 19 patients in treatment group, 20 patients in placebo group; 30 patients complete trial 15/15) are studied. Double-blind, randomized, placebo controlled trial, three centres of Tehran, Iran. Salvia officinalis extract or placebo 60 drops/day for four months. The results indicated that Salvia officinalis group has better outcome on ADAS-cog and CDR-SB) than control, and also can reduce agitation. (Akhondzadeh et al., Journal of Clinical Pharmacology and Therapeutics, 2003)
Crocus sativus (Saffron)

1. Saffron (xi or zang hong hua 西或藏紅花)
2. Active blood (Li Shizhen Bencaogongmu, 李時珍本草綱目)
3. Saffron extract has anti-inflammation, anti-oxidant.
4. Saffron extract can inhibit the aggregation and deposition of β-amyloid in human brain. (Papandreous et al., J Agri food and chem, 2006)
5. A total of 46 patients with mild to moderate AD are studied, 16-week, double-blind, randomized and placebo-controlled study. Saffron 30 mg (15 mg, twice a day). The results indicated that saffron group has better outcome on AD assessment scale-cognitive subscale (ADAS-cog) and clinical dementia rating scale-sums of boxes (CDR-SB) than control. The side effect is similar between two groups (Akhondzadeh et al., Jurnal of Clinical Pharmacy and Therapeutics, 2010)
Ayurvedic medicine

- **Bacopa monniera** (玄參科 巴戈 water hyssop)
  1. improve memory and intellectual functions

- **Centella asiatica** (雷公根 Asiatic pennywort)
  1. improve memory (combine with milk)

- **Withania somnifera** root (南非醉茄, 印度人参)
  1. sharpen memory
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Acupuncture and Moxibustion

1. Meridian and collateral (Jing luo 經絡) system
2. Acupuncture point
Meridian and collateral system
What is the meridian and collateral system

1. The meridian and collateral system is the pathway of Qi and blood, and which circulates all the body.

2. The meridian and collateral system pertain to viscus and bowel (zang fu 臟腑) interior, and connects to extremities-joints (zhi jie 腋節) in the exterior.

3. The circulation of meridian and collateral system is like a ring that is no end.
Meridian qi

Innate essential qi (Source qi, Genuine qi)

Acquired qi
(stomach qi, food qi)
Function of the meridian and collateral system

1. To suffuse and communicate in the whole body.
2. Qi and blood circulates to regulate and balance yin and yang in the body.
3. Resist to evils, to reflect the symptom and sign disease.
4. Conductive and response information to adjust the deficiency and excess of the body.
The meridian and collateral system

◆ Meridian vessel (jing mo 經脈)
  1. twelve meridians (shi er jing mo 十二經脈)
  2. eight extra meridians (qi jing ba mo 奇經八脈)
  3. twelve meridian divergences (shi er jing bei 十二經別)

◆ Collateral vessel (luo mo 絡脈)
  1. fifteen collateral vessels (shi wo luo mo 十五絡脈)

◆ Meridian sinew (jing jin 經筋)
  1. twelve meridian sinews (shi er jing jin 十二經筋)

◆ Cutaneous region (pi bu 皮部)
  1. twelve cutaneous regions (shi er pi bu 十二皮部)
Twelve meridians (**shi er jing mo** 十二經脈)

- **three yin meridians of the hand** (**shou san yi jing** 手三陰經)
  1. lung meridian (**fei jing** 肺經)
  2. heart meridian (**xin jing** 心經)
  3. pericardium meridian (**xin bao jing** 心包絡經)

- **three yang meridians of the hand** (**shou san yang jing** 手三陽經)
  1. small intestine meridian (**xiao chang jing** 小腸經)
  2. large intestine meridian (**da chang jing** 大腸經)
  3. triple energizer meridian (**san jiao jing** 三焦經)

- **three yin meridians of the foot** (**zu san yi jing** 足三陰經)
  1. spleen meridian (**pi jing** 脾經)
  2. kidney meridian (**shen jing** 腎經)
  3. liver meridian (**gan jing** 肝經)

- **three yang meridians of the foot** (**zu san yang jing** 足三陽經)
  1. bladder meridian (**pang guang jing** 膀胱經)
  2. stomach meridian (**wei jing** 胃經)
  3. gallbladder meridian (**dan jing** 膽經)
Three yin and three yang the hand
Three yin and three yang of the foot
Eight extra meridians (奇經八脈)

1. governor vessel (GV) (督脈)
2. conception vessel (CV) (任脈)
3. thoroughfare vessel (衝脈)
4. belt vessel (帶脈)
5. yin heel vessel (陰蹻脈)
6. yang heel vessel (陽蹻脈)
7. yin link vessel (陰維脈)
8. yang link vessel (陽維脈)

◆ Twelve meridian divergences (十二經別)
1. three yin and three yang meridian divergences of the foot and hand (手足三陰三陽經別)
Yang and yin meridians

1. Yang meridian ascend upward to head, whereas yin meridian do not except liver meridian from vertex into brain.

2. Three yang meridians of the hands are from hand to head.

3. Three yang meridians of the foot are from foot to head

4. Three yin meridians of the hands are from hand to chest.

5. Three yin meridians of the foot are from foot to abdomen.
SiShenCong (si shen cong 四神聰)

1. **Entra-meridian qi xue（奇穴）**: Acupoint is not locate on the meridian, but that has special function.

2. **Function**: tranquilize the heart and improve vision and hearing.

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**Baihui (GV20)**

1. Three yangs and 5 convergences (hand and foot three yangs and governor vessel and liver meridian)

2. Restoring conscious and calming wind.
Zhi-Three Needles (zhī sān zhēn 智三針)

1. 1 Shenting (GV24) + 2 Benshen (GB13)
2. Shen (神): spirit, intelligence

Shenting (GV24)

Benshen (GB13)
Nao-Three Needles (nao san zhen 腦三針)

1. 1 Naohu + 2 Naokong
2. Treating brain disorders
Often use acupoints for treatment of dementia

- Baihui (GV20)
- Shenting (GV24)
- Benshen (GB13)
- Naohu (GV17)
- Naokong (GB19)
- Protuberantia (Occipitalis externa)
Modern studies in acupuncture for AD

1. The acupuncture at Taichong (LR3) and Hegu (LI4) may active cognitive–related region in a fMRI studies of 36 subjects (8 mild cognitive impairment, 14 AD and 14 healthy control. (Wang et al., Plos one 2012.)

Taichong (TR3)  Hegu (LI4)
2. A total of 31 patients with dementia were studied, acupressure (3-5 kilogram) at Fenchi (GB20), Baihui (GV20), Shenmen (HT7), Neiguan (PC6) and Sanyinjiao (SP6), 2 min each points after 5 min of warm-up activities (holding, rubbing and pressing palm and finger joints for 5 min), twice a day, five days a week for 4 weeks, the results indicated that acupressure may reduce agitation behavior (Coben-mansfield agitation inventory scores, CAMI). Yang et al., Journal of Clinical Nursing, 2007.
3. Similar study, a total of 26 patients (16 male, 10 male) with mild to moderate dementia were studied, electroacupuncture (silver needle) at left Zusanli (ST36), Fenlong (ST40), Shenmen (HT7) and Taixi (K13). The results indicated that electroacupuncture activates regions were correlated to cognitive function.

Outline

1. Basic theory of Traditional Chinese Medicine (TCM)
2. Theory and treatment of Dementia in TCM
3. Modern study of anti-dementia traditional herbs
4. Acupuncture treatment of dementia
5. Conclusion
Conclusion

1. When dementia is diagnosed as like a bad luck beginning.
2. It is heartening, a number of potential researches toward effective for the treatment of dementia recently.
3. Integrative care including traditional medicine and modern medicine maybe may develop a new therapeutic pathway let this event from despair to hope.
Thanks for your attention