

Traditional Chinese Medicine in treatments to depression

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Submitted: 2007-11-07 Accepted: 2008-10-14 Published online: 2009-02-28

Key words: **traditional chinese medicine; depression; glucosides; herbal medicine**

Neuroendocrinol Lett 2009;30(1):17-18 PMID: 19300379 NEL300109A14 ©2008 Neuroendocrinology Letters • www.nel.edu

Abstract

Traditional Chinese Medicine (TCM) has a long history of more than 5,000 years and it has the earliest medicine book in the world: Yellow Emperor's Canon: Internal Medicine (Huang Ti Nei Jing), by the Yellow Emperor of China (2695–2589 BC) (Lin, 1988; Shampo and Kyle, 1989; Wang, 1999). However the combinational and systemic recipes that bring TCM high efficiency also block the promotion of TCM treatment to various diseases, including depression. In this short comment we firstly give some theoretical basis for TCM treatment to depression, then some clinical reports on efficiency; we also present some possible explanations on TCM treatments to depression.

Depression is one of the leading causes of mortality clinically, with estimates of lifetime prevalence as high as 21% of the general population in some developed countries (Wong and Licinio, 2001). People have thus developed various animal models to test new antidepressants, to understand the mechanism of depression development (McArthur and Borsini, 2006) and to seek for possible side effects of new drugs before clinical use. However the withdrawals of antidepressants often produce phenomena consisting of somatic and psychological symptoms, such as changes in mood, affect, appetite, and sleep, even the relapse into depression again (Dilsaver and Greden, 1984; Lejoyeux and Adès, 1997). Psychoanalysis was proposed to be one of the effective ways in combinational treatments to depression, and the other emerging but promising strategy is herbal medicine, especially Traditional Chinese Medicine (TCM) that might comprised of hundreds of components within single dose treatment.

In the theory of Traditional Chinese Medicine, mood disorder was regarded as one of the most important risk factors for other diseases (Li and Kong, 2001). If we consider the human body as the functional integration of different tissues and

organs, it might be interesting to seek for two major subtypes in depression-related diseases: the first one is depression-resulted diseases, including reduced hippocampus neurogenesis and decreased cognition ability (Jacobs *et al.*, 2000), many somatic and psychological symptoms (Nestler *et al.*, 2002); and the second case is diseases-resulted depression, which consists of post-traumatic stress disorders, brain/body diseases-resulted depression, as well as the basis for olfactory bulbectomized (OB) rat as the animal model of depression (Kelly *et al.*, 1997). The famous TCM book "Yellow Emperor's Canon: Internal Medicine" (Huang Ti Nei Jing) has established several principles of treatments to depression, such as "liver expelling", "heart/vascular function", "lung protection" and "spleen modulation" (Wang, 1999). It is worth noticing that in TCM treatments to depression include a wide spectrum of methodology, varying from drugs in meal and soup, psychological treatment to martial arts such as *Taichi* (including both the form/pattern and combating techniques such as "pushing hands") and internal works, as well as acupuncture. Such kind of combinational strategy might improve clinical efficiency to a promising status in the coming future.

Successful trails of cure depression with TCM pharmacology were widely reported in China in recent years. The *Radix Bupleuri Chinensis* (Chinese Thorowax Root) extraction containing saikosaponins a-d mixed with spinasterol have been widely used to treat depression clinically (Chen *et al.*, 1998; Zhang and Feng, 1998), especially when combined with *Rhizoma Zingiberis Recens*, *Pericarpium Citri Reticulatae* and *Radix Glycyrrhizae*, with the reported efficiencies ranging from 80% to 100% (Li, 2001). *Radix Glycyrrhizae*, *Triticum aestivum L.* and *Zizyphus juiuba* Mill mixed soup is another prescription in treating depression (Zhao and Zhao, 1999). *Tribulus terrestris* and *Flos Albiziae* were also used to treat depression (Li, 1996), especially subtypes with sleep disorders. All these recipes contain some glucosides, which were proved to be effective in both animal models and clinical trials; for instance, tPnGL, the total sanchinoside extracted from leaves of *Panax notoginseng*, has been found with immediate antidepressant effects via modulation on sodium channel currents and action potential transmission (Yuan *et al.*, unpublished data), which is promising compared with common anti-depressants that are only effective with chronic administration (Nestler *et al.*, 2002). Another emerging role of glucosides is neuroprotection (Chen and Zhang, 2004) under stress, which might result from the attenuated activation of hypothalamo-pituitary-adrenal (HPA) axis (Kim *et al.*, 2003).

An important issue in TCM treatment is the modulation of “Chi”, which could be achieved from acupuncture, exercise such as Tai Chi practice, as well as rhythmic sleeping habits. “Chi” was considered to be the active sources that keep living things alive and the loss of “Chi” downregulates the internal immunity to external pathogens. Additionally, “Chi” could also be shortly increased via alcohol, whose long-term toxic effects are decreased neurogenesis and abnormal neural circuits firing patterns. This is consistent with the excitatory effect of alcohol at low concentration, but inhibitive at high concentration to central nervous system. It is yet hard for us to tell whether “Chi” exists or not, as few of modern neuroscientists have studied “Chi” effects on central nervous system systemically and the failure of translation of many TCM items into scientific phases. Possibly, for Taichi practicing, both the motion exercises and spirits training can help the brain, the mechanisms of which may imply some features of “Chi” in TCM.

TCM has a long history in treating depression, yet the combinational recipes treatment reports are often rejected by psycho-pharmacological journals as it is hard to explain which component is effective or which component is most effective, and it's difficult to tell whether the mixture is toxic or not to different patients considering ranging levels of sensitivities. It is hoped that with the facility of structural biology and molecular techniques, the magic of TCM can be unmasked and applied to more depressed patients in other parts of the

world; “let nature cures”. And TCM is more than herbal medicine.

Acknowledgement: The author was supported by Department of Anatomy, The University of Hong Kong, Li Kai Shing Faculty of Medicine.

REFERENCES

- Chen, CX and Zhang HY (2004). Ren Shen Zao Dai Re De Yan Jiu Jin Zhan. Foreign Medical Sciences Section of Pediatrics **31**: Suppl 110-112.
- Chen HC, Han XJ and Teng XY (1998). Zhong Xi Yi Jie He Zhi liao Yi Yu Zheng 35 Li. Shan Li Zhong Yi **19**: 210.
- Dilsaver SC, Greden JF (1984). Antidepressant withdrawal phenomena. *Biol Psychiatry* **19**(2): 237-256.
- Jacobs BL, Praag H, Gage FH (2000). Adult brain neurogenesis and psychiatry: a novel theory of depression. *Mol Psychiatry* **5**(3): 262-269.
- Kelly JP, Wrynn AS, Leonard BE (1997). The olfactory bulbectomized rat as a model of depression: an update. *Pharmacol Ther* **74**(3): 299-316.
- Kim DH, Moon YS, Jung JS, Min SK, Son BK, Suh HW, *et al* (2003). Effects of ginseng saponin administered intraperitoneally on the hypothalamo-pituitary-adrenal axis in mice. *Neurosci Lett* **343**(1): 62-66.
- Lejoyeux M, Ades J (1997). Antidepressant discontinuation: a review of the literature. *J Clin Psychiatry* **58** (Suppl 7): 11-15; discussion 16.
- Li BL (2001). Yi Yu Zheng De Zhong Yi Yao Yan Jiu Jin Zhan. *JTCM* **42**: 566-567.
- Li JM, Kong LD (2001). [Advances in the study on depressive and anxiety disorders treated with traditional Chinese medicine and herbal drugs]. *Zhongguo Zhong Yao Za Zhi* **26**(12): 805-807.
- Li P (1996). Zhong Yao Ji Li He Huan Yin Zhi Liao Yi Yu Zheng 60 Li Liao Xiao Fen Xi. *Guang Xi Yi Ke Da Xue Xue Bao* **13**: 96.
- Lin YC (1988). In: The essential book of traditional chinese medicine vol I. Theory, Columbia University Press, New York (1988), pp. 2.
- McArthur R, Borsini F (2006). Animal models of depression in drug discovery: a historical perspective. *Pharmacol Biochem Behav* **84**(3): 436-452.
- Nestler EJ, Barrot M, DiLeone RJ, Eisch AJ, Gold SJ, Monteggia LM (2002). Neurobiology of depression. *Neuron* **34**(1): 13-25.
- Shampo MA, Kyle RA (1989). Nei Ching--oldest known medical book. *Mayo Clin Proc* **64**(1): 134.
- Wang B (1999). Yellow Emperor's Canon Internal Medicine (Paperback). China Science & Technology Press, China (Dec 1999).
- Wong ML, Licinio J (2001). Research and treatment approaches to depression. *Nat Rev Neurosci* **2**(5): 343-351.
- Zhang LH and Feng LL (1998). Zhong Yao Zhi Liao Yin Ni Xing Yi Yu Zheng 33 Li. *Zhong Guo Xiang Cun Yi Sheng Za Zhi* **14**: 32-33.
- Zhao ZK and Zhao M (1999). Yi Lv Kang Zhi Liao Yu Zheng 180 Li Liao Xiao Guan Cha. *Shan Dong Zhong Yi Za Zhi* **18**: 110-111.