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Research Article

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Acupuncture to Prevent, Detect and Treat Postnatal Depression

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ABSTRACT

Giving birth is an intense physical and emotional experience. Also, 50 to 80% of mothers experience “baby blues” on the 3rd day after giving birth. Symptoms (sadness, irritability, insomnia, mood swings, vulnerability and incompetence's feelings) are transient, and most often disappear within 2 weeks after delivery. However, perinatal period remains a time of vulnerability, and PPD’s underdiagnosed: 20% of mothers and 10% of fathers haven’t any support.

Keywords: Postpartum Depression, Acupuncture, Inflammatory Cytokines, Structural and Functional Improvement of Amygdala, Predictive Biomarkers

Introduction

Giving birth is an intense physical and emotional experience. Also, 50 to 80% of mothers experience “baby blues” on the 3rd day after giving birth. Symptoms (sadness, irritability, insomnia, mood swings, vulnerability and incompetence's feelings) are transient, and most often disappear within 2 weeks after delivery. However, perinatal period remains a time of vulnerability, and PPD’s underdiagnosed: 20% of mothers and 10% of fathers haven’t any support [1].

If left untreated, they cause harmful effects such as disturbances in mother-child interaction and can even lead to suicide, the leading cause of maternal mortality, considered up to one year after the end of pregnancy. It concerns 17% of maternal deaths with 45 deaths. Thus, a maternal death of psychiatric origin occurs every three weeks in France with a MMR (Mortality and Morbidity Review) of 1.9/100,000 live births [2,3]. The peak occurs around four to five months after delivery, especially in firsttime mothers, or women who have already had a proven history of psychiatric illness or eating disorders.

Method

Authors of April 2024 ‘s report consider that "60% of maternal deaths are probably or possibly avoidable" after analysis the path of the women who died, even if PND’s etiology is not clearly defined [2,3]. Risk factors for suicide, personal and family, and perinatal depression must be sought in the three dimensions: somatic, psychiatric and social, because scalable (social context, living conditions, history of violence). Maternal mortality’s risk increases from 35 years old. Mortality ‘s migrant women ‘s rate is twice that of women born in France, and socially vulnerable women are 1.5 times more represented among women who die.

In the age of social media, idealized visions of pregnancy and motherhood are regularly discussed. These widely shared images often give a distorted view of pregnancy - with a slogan "pure happiness" glossing over the difficulties frequently encountered by mothers and thus making parents feel guilty for whom everything would not be easy and aesthetically pleasing.

Prolonged baby blues may turn into postnatal depression (PPD). Low spirits, a lack of pleasure, sleep and eating disorders, timidity and fear, anxiety and anger, a loss of self-care and baby care, and even suicidal ideation are all common symptoms of PPD [2]. In France, systematic screening for depression recommended in the month following birth, during mother’s consultation, or child’s examination at 15 days. The midwife can screen for postnatal depression too with a postnatal interview, conducted between 4 and 8 weeks postpartum. The EPDS questionnaire (10-question Edinburgh Postnatal Depression Scale) is one of valuable and efficient way to identifying risk’s patients. The mother should complete the scale herself.

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Depressive symptoms in patients with PPD can be assessed using the HAMD-17 scale (17 items, scored from 0 to 52, with higher scores representing more severe depressive symptoms)

At least 5 of the following symptoms, for at least 2 weeks, with at least the first or second symptom:

- Low and depressed mood
- Loss of interest or lack of pleasure in hobbies
- Significant gain or loss weight
- Unsatisfying sleep and fatigue on waking, insomnia, or lethargy
- Excitement or psychomotor retardation
- Tension feelings, fatigability 7 - Worthlessness, self-blame, or guilt feelings
- Concentration difficulty, poor memory
- Recurrent death thoughts

Clinical manifestations of postnatal depression can be treated with acupuncture, for example, according to the Zheng syndromes (Table 1).

Table 1: DPN TCM Syndrom

Zheng	Stagnation of Liver Qi	Liver depression, transforming into Fire	Anxiety injures Spirit	Heart-Spleen Deficiency	Yin Deficiency and Fire exuberance
Psychic signs	Depression mood	Irritability	Mental confusion- Sadness and crying tendency- Insomnia and dreaminess	Sleeplessness- Amnesia	Insomnia- Boredom- Irritability
Other symptoms	Distending pain in chest and hypochondrium- Belching- Sighing- Irregular periods	Distending pain in chest and hypochondrium- Headache and red eyes- Epigastrium discomfort and acid regurgitation- Constipation, yellowish urine	Chest oppression	Heart palpitation and chest oppression- Yellowish complexion- Dizziness- Asthenia- Sweating- Poor appetite	Heart palpitation and dizziness- Red face- Feverish sensation in palms and soles- Mouth dryness- Night sweats
Tongue	Whitish and thin coating	Red- Yellowish thin coating	Red tip of the tongue- Thin white coating	Pale- Thin white coating	Red- Thin coating
Pulse	Taut	Taut	Taut and thin	Taut and thin- or thin and rapid pulse	Taut and thin- or thin and rapid pulse
Treatment	BL 18 ganshuSP 6 sanyinjiaoBL 17 geshu	GB 20 fengchiBL 18 ganshuPC 7 daling	SP 6 sanyinjiaoBL 15 xinshu	SP 6 sanyinjiaoST 36 zusanliBL 18 ganshu	KI 3 taixiSP 6 sanyinjiaoBL 18 ganshu

Results

Three recent studies applying the "Tiao Ren Tong Du" protocol have demonstrated that acupuncture can relieve the symptoms of PPD.

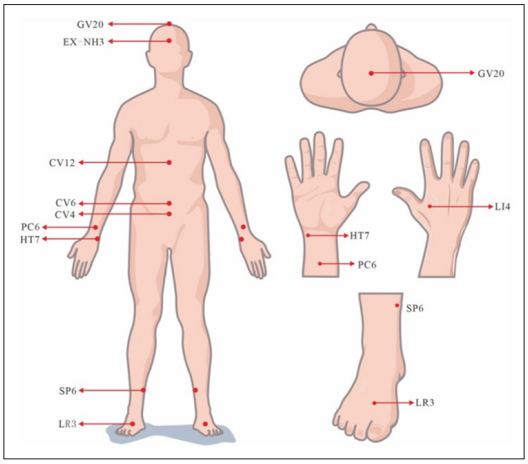
« Tiao Ren Tong Du » Method:

GV 20 baihui, ex HN-3 yintang

CV 6 qihai, CV 4 guanyuan

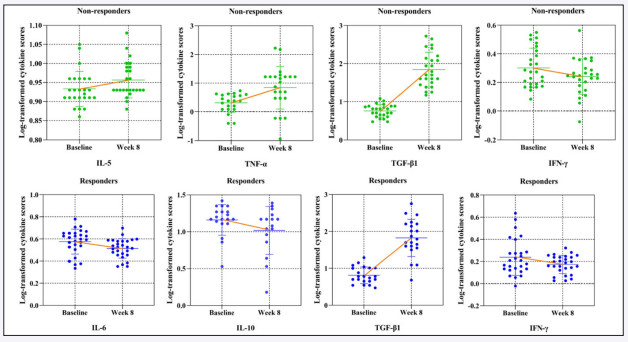
PC 6 neiguan, HT 7 shenmen, LI 4 hegu

SP 6 sanyinjiao, LR 3 taichong



Recent studies have shown that acupuncture may improve depressive symptoms in patients with PPD. It might through adjusting peripheral inflammatory response by up-regulating anti-inflammatory cytokines and down-regulating pro-inflammatory cytokines. (Table 2) [5].

Table 2: Yu et al 's study [5]

Objective	Evaluate the clinical effect and investigate the relationship between peripheral cytokine levels and responsiveness to TCM treatment in PPD
Design and setting	Shenzhen TCM Hospital and Maternity & Child Healthcare Hospital Shenchen, China From march 2021 to february 2022
Patients	96 patients with PPD completed 8 weeks TCM Aged 20 to 49 years old Diagnosed as PPD by psychiatrist 17 HDRS scores from 8 to 24
Points	« Tiao Ren Tong Du » Method GV 20 baihui, ex HN-3 yintang CV 6 qihai, CV 4 guanyuan PC 6 neiguan, HT 7 shenmen, LI 4 hegu SP 6 sanyinjiao, LR 3 taichong
Method	46 Blood samples collected before/after treatment Change of 17 HDRS scores Before/1-2-4-8 weeks treatment Transformed Inflammatory Cytokine Scores between Responders (21)/non-responders (25) Before/after 8 weeks treatment
Intervention	Twice weekly therapy sessions, Needles 0.3 mm × 40 mm/0.3 mm × 75 mm, once every 10 minutes, the acupuncturist rotated, lifted, and thrust equally on all of the needles to achieve de qi 30 minutes For 8 weeks straight A total of 16
Results	**17 HDRS Scores:** **Significant statistical reduction since the first week** **Reduction > at the end of treatment (5,31)** **With responders: mean reduction 8,14** **No responders: mean reduction 2,56 (slighter improvements)** **Transformed Inflammatory Cytokine Scores:** **No significantly difference: responders/no responders** **Cytokine scores: significant alteration of log-transformed**
	
Conclusion	TCM could alleviate symptoms in patients with PPD TCM might through adjusting peripheral inflammatory response by: Up-regulating anti-inflammatory cytokines Down-regulating pro-inflammatory cytokines

One mechanism may be attributed to changes in the amygdala sub-region structure and the functional connections of brain areas linked to the processing of negative emotions (increased brain volume of grey matter in amygdala subregions, improved functional connections between the bilateral amygdala and the cerebellum [6]. (Table 3)

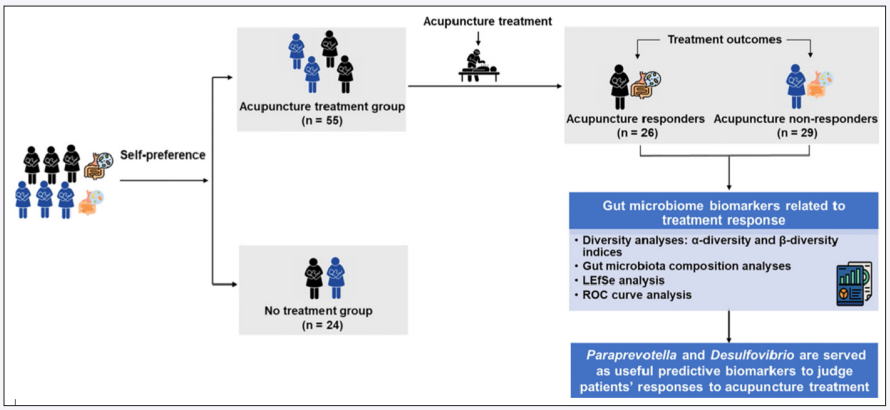
Table 3: Yang et al' s study [6]

Objective	Analyse the changes in structure and function in amygdala sus-regions in patients with PPD before and after acupuncture

Design and setting	Department, Shenzhen Traditional Chinese Medicine Hospital, Shenzhen, China From June 2019 to June 2022
Patients	2 groups included /8 weeks same TCM treatment On 52 all PPD, 22 Acu-PPD / 24 Acu-HPW (control group healthy post-partum women) Diagnosed by psychiatrist 17 HDRS scores from 7 to 24 / EPDS scores > 13
Intervention	« Tiao Ren Tong Du » Method EA 2 HZ continuous wave: GV 20 Baihui, Ex-HN3 Yintang, CV12 Zhongwan, CV 6 Qihai Manual stimulation: CV 4 Guanyuan, PC 6 Neiguan, HT 7 Shenmen, LI 4 Hegu, SP 6 Sanyinjiao, LR 3 Taichong Sessions: initiate within 1 week after screening 3 times per week 30 minutes For 8 weeks
Method	At baseline and after TCM treatment Results 17 HDRS / EPDS scores Resting-state functional magnetic resonance imaging (rs-fMRI) scans
	Gray matter volume (GMV) measure in sub-regions of the amygdala Analysed separately values for resting-state functional connectivity (RSFC)
Results	Before treatment: 17 HDRS and EPDS Scores HPW group < all-PPD and Acu-PPD (8 weeks) group (P< 0,05) After acupuncture: 17 HDRS and EPDS Scores < Acu-PPD group (P<0,05) GMV of the 1AMG.R > Acu-PPD group (P<0,05) RSFC > Acu-PPD group (P<0,05) GMV 1AMG.L & 1AMG.R in all-PPD group < HPW group (P<0,05) GMV in the 1AMG.R significantly correlated with EPDS scores in the all-PPD group (P<0,05)
Conclusion	TCM may help alleviate symptoms in patients with PPD TCM may be linked to increase brain GMV in the amygdala sub-regions TCM may improve functional connections between the bilateral amygdala and cerebellum

Finaly, fecal microbiota ((Paraprevotella, Desulfovibrioare) may be useful predictive biomarkers to predict PPD patients likely to respond to acupuncture. (Table 4) [7].

Table 4: Zhou's study [7]

Objective	Analyze the predictive value of the gut microbiota in patients with TCM treatment in PPD Investigate if provide predictive biomarkers for the therapeutic efficacy of TCM in patients with PPD
Design and setting	Shenzhen TCM Hospital and Maternity & Child Healthcare Hospital, Shenchen, China the Fourth Clinical Medical College of Guangzhou University of Chinese Medecine From 25 march to 22 november 2021
Patients	79 PPD patients diagnosed by psychiatrist (EPDS & 17 HDRS scores) Acupuncture treatment group 24 no treatment group 
Intervention	« Tiao Ren Tong Du » Method Twice weekly therapy sessions 30 minutes For 8 weeks A total of 16

Method	Clinical outcomes before/after 8 weeks treatment Responders: 17 HDRS scores reduced by > 50% or < 7 after treatment Non responders: 17 HDRS scores reduced by < 50% Analysed baselines fecal samples
Results	17 HDRS Scores reduction rate in acupuncture group > control group (p< 0,01) 47,27% responders in acupuncture group 12,5% no treatment recovered after 8 w. follow up
	Intestinal microbial biomarkers Desulfovibrio & Paraprevotella = predictors of antidepressant treatment responses 5 biomarkers increase and 2 biomarkers decrease in the PPD group
Conclusion	TCM may alleviate symptoms in patients with PPD Gut microbiota, an objective predictor of therapeutic acupuncture effect to improve clinical symptoms in PPD Desulfovibrio & Paraprevotella predicted early responses to antidepressants in patients with PPD receiving acupuncture

Conclusion

These three chineses randomized controlled trials from 2021 and 2023 showed: Acupuncture, with a physical and psychological dimension, alleviate symptoms in patients with postnatal depression (cytokines, brain effects, microbiota biomarkers). She supports mothers from the very beginning, especially when the baby blues persists to prevent postnatal depression.

This treatment should start as soon as possible for greater effectiveness.

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