

Therapeutic effects of targeted nursing interventions combined with auricular-plaster therapy on anxiety level and life quality of Hepatitis B patients

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Abstract: Mood disorders are common problems in patients with chronic hepatitis B virus (HBV) infection, most clinical treatment focus on anti-viral and anti-fibrosis rather than taking care of mood disorders. In the past decades, we have developed a Chinese medicine treatment method together with nursing intervention, which shows a positive treatment effect on patients. 158 cases of hepatitis B patients were randomly divided into one control group (78 cases), and one observation group (80 cases). The patients in control group received hepatology nursing, liver protecting and transaminase lowering medicine, and ear acupoint bean pressing treatment. In addition to the nursing and treatment as the control group, the patients in observation group were given targeted nursing interventions, including psychological intervention, emotional intervention, cognitive intervention, and systematic family and community support intervention. The anxiety level and sleep quality of patients in both groups were compared. The improvement of hepatic indexes was checked and life qualities in both groups were also compared. Compared to the control group, the patients in the observation group provided have statistically significant improvement on anxiety control, sleep quality, and hepatic indexes changes ($P < 0.05$). The observation group also showed remarkably better life quality scores (GQLI-64) than the control group ($P < 0.01$). This research confirmed that targeted nursing intervention coupled with ear acupoint bean pressing showed effective improvement on the anxiety control and sleep quality of chronic hepatic B patients, and demonstrated better hepatic index recovery. Patients in the observation group also have higher life quality scores than the control group.

Keywords: Targeted nursing intervention, ear acupoint bean pressing, hepatitis B, life quality.

INTRODUCTION

Hepatitis B is a high incidence of longer duration, easily repeated, severe physical and psychological harm to chronic persistent disease, treatment is mainly anti-viral, anti-fibrosis, liver lowering transaminase, with diet and rest. Current lack of complete cure drug, combined from the social, economic, and other aspects of family pressure, patients prone to anxiety, psychological and physiological health (Pariante *et al.* 1999). Statistics show that: the current rate of 7.18% of HBV, of which about one-third can be transformed into chronic active hepatitis, hepatitis B virus infection can cause hepatitis, cirrhosis, hepatocellular carcinoma and other severe end-stage liver disease, affecting the life of the patient, at the same time also to patients with anxiety, insomnia and other mental illness, decreased quality of life (Pariante *et al.* 1999). In the past decades, we have developed a Chinese medicine treatment method together with nursing intervention, which shows a positive treatment effect on patients. To investigate systematically the relevance of nursing intervention coupled with ear acupoint bean pressing on anxiety level and life quality of hepatitis B patients, we examined this methods with 158 cases of hepatitis B patients which were randomly divided into one control

group (78 cases), and one observation group (80 cases). The patients in control group received hepatology nursing (Gaba 1985; Groenkjaer 2015), liver protecting and transaminase lowering medicine, and ear acupoint bean pressing treatment (Ernst 2006; Litscher 2002). In addition to the nursing and treatment as the control group, the patients in observation group were given targeted nursing interventions, including psychological intervention, emotional intervention, cognitive intervention and systematic family and community support intervention. The anxiety level and sleep quality of patients in both groups were compared. The improvement of hepatic indexes was checked and life qualities in both groups were also compared. Amazingly, compared to the control group, the patients in the observation group provided have statistically significant improvement on anxiety control, sleep quality, and hepatic indexes changes ($P < 0.05$). The observation group also showed remarkably better life quality scores (GQLI-64) than the control group ($P < 0.01$).

This suggests that targeted nursing intervention coupled with ear acupoint bean pressing showed effective improvement on the anxiety control and sleep quality of chronic hepatic B patients, and demonstrated better hepatic index recovery. Patients in the observation group also have higher life quality scores than the control group.

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Detailed reports are as follows:

MATERIALS AND METHODS

Participants

158 patients with hepatitis B, who hospitalized in the Department of Digestive Diseases of our hospital in China from January 2012 to December 2014, were volunteered to participate in this study. Patients were randomly assigned to control group (n=78) and observational group (n=80). The control group contained 51 males and 27 females, at the age of 24-76 years old. The observational group contained 52 males and 28 females, at the age of 23-77 years old. Patients from both groups were consistent with the diagnostic criteria of "Chronic Hepatitis B Prevention Guide" in 2006 (Clements *et al.* 2006). Decompensated cirrhosis, combined with other viral hepatitis and important organ diseases were excluded in all patients. No significant differences in gender, age, occupation, education, diagnosis and clinical symptoms were detected between the control and observational groups ($P>0.05$), with comparability.

This study was approved by the ethic committee at Linyi Hospital of Traditional Chinese Medicine and Fudan University Ethics Committee (No. 290). Written informed consent was obtained from each subject prior to inclusion in the study.

Methods

Control group (n=78): on the basis of liver disease nursing and medication for protecting liver and reducing enzyme, patients were subjected to auricular-plaster therapy. Selection of acupoints: *Ganshu* (BL 18), *Shenmen* (HT 7), *Pizhixia* (MA-AT 1), *Neifenmi* (MA-IC 3), *Erzhong* (Extra) and *Jiaogan* (MA-AH 7). The auricular points on one side were first massaged. After conventional disinfection, 0.8cm-0.8cm adhesive plasters stuck with cowherb seeds were affixed to above points. Gentle massage was conducted at 07:00-08:00, 11:00-12:00, 14:00-15:00 and 17:00-18:00 every day; Pressurized for 5 minutes. Massage lasted about 20 seconds at each acupoint every time. 3 days later, contralateral auricular points were massaged. Bilateral auricular points were massaged alternately. Massage was carried out for 28 consecutive days, and stopped for 5 days, as a course. There were four courses in total. Effects of auricular-plaster therapy on anxiety and quality of life were observed in patients with hepatitis B.

Observational group (n=80): on the basis of medication and care in the control group, patients received targeted nursing interventions. According to specific circumstances of patients and their families, experienced charge nurses formulated targeted nursing intervention programs as follows:

A. Psychological intervention: Established a good nurse-

patient relationship; explained success stories of auricular-plaster therapy to hepatitis B patients; so that patients were willing to accept the information delivered by nurse and convinced; enhanced patient's self-confidence; so that the patient was in the best state of mind of accepting treatment care.

B. Emotional care: Relieved patient's anxiety. Chinese medicine believes that emotions can affect liver disease (Liu *et al.* 2011; Luo *et al.* 2007; Xu *et al.* 2010; Zhang and Ruan 2004). Ease of mind and smooth liver-energy are helpful to the recovery of liver disease (Xu *et al.* 2010). Depressed emotion, functional activity of liver *Qi* being not smooth, depression of hepatic *Qi*, and *Qi* stagnation and blood stasis will worsen liver disease (Luo *et al.* 2007). Nurses patiently answered questions raised by patients and solved their psychological burden using effective method so that the patient was not disappointed or pessimistic. The patients were cheerful, had smooth functional activities of vital energy, and exuberant function of *Qi* and blood in the liver organs.

C. Cognitive intervention (Simon *et al.* 2012): Nurses have strict work attitude and professional theoretical knowledge, are enthusiastic and friendly, and smiling. Nurses explained etiology, transmission, protective measures of chronic hepatitis B of self and family, occurrence, development and prognosis of hepatitis B, which raised patient's awareness of hepatitis B and made patients aware of the entire course of treatment.

D. Behavioral intervention: Corrected bad habits and behaviors; explained the strong relationship of daily life with occurrence, development and therapeutic outcomes of disease; informed the importance of regular life, good eating habits, medication compliance and periodic return visit.

E. Family and social support interventions: Helped patients to establish ongoing emotional support; Family attitudes and behaviors directly affect the emotional reactions of patients. Made patients experience the warmth of family and society; inspired their confidence in life. The attitude of family members affected the disease progression both in critically ill patients and virus carriers.

The effects of targeted nursing interventions combined with auricular-plaster therapy on quality of life in hepatitis B patients were observed by the above method.

Evaluation for therapeutic outcomes

Conditions were compared between the two groups before and after nursing. (1) Self-Rating Anxiety Scale was used to assess anxiety. Pittsburgh Sleep Quality Index (PSQI) was utilized to assess sleep quality: total score 1-21 points; PSQI >7 is considered the reference value of poor sleep quality. PSQI ≤7 is considered good sleep quality, and PSQI >7 as poor sleep quality. High total score means

poor sleep quality. (2) Changes in liver function indexes. (3) Quality of life scores (GQLI-64): Comprehensive assessment of the quality of life questionnaire compiled by Ong *et al.* was used before and after treatment (Ong *et al.* 2010). This scale contains physical health, mental health, material living condition and social function four dimensions, 16 factors, and 64 items. Patients were scored by cumulative scoring method. Higher score presents better quality of life.

STATISTICAL ANALYSIS

Data were processed with SPSS 18.0 software. Measurement data were expressed as the mean \pm SD. The difference in data was compared using two-sample *t*-test. Numeration data were expressed as %. *chi*-square test was utilized. A value of $P \leq 0.05$ was considered statistically significant.

RESULTS

Comparison of anxiety and sleep quality before and after interventions in both groups

Improvements in anxiety and sleep quality were significantly better in the observational group than in the control group ($P < 0.05$; table 1)

Comparison of liver function indexes before and after treatment in patients of both groups

Significant differences in normal rate of alanine aminotransferase and normal ratio of total bilirubin were detected between the observational and control groups after treatment ($P < 0.05$; table 2).

Comparison of quality of life (GQLI-64) score in patients of both groups before and after treatment (mean \pm SD)

Significant differences in quality of life scores were detectable between the observational group (72.89 \pm 6.27) and control group (62.35 \pm 7.35) ($P < 0.01$). Above data

indicated that the quality of life was obviously increased in the observational group.

DISCUSSION

Patients with chronic liver disease easily experience negative emotions such as insomnia, irritability, and anxiety, because of hepatocyte damage, reduction of liver ability to inactivate hormone, effects of high levels of hormones on the nervous system, and increased endotoxin. Above negative emotions impact seriously patient's quality of life and life. A previous study confirmed that 69.4% hospitalized patients with liver disease had sleep disorders (De Cruz *et al.* 2012), and the proportion was noticeably higher than norm (45.6%), and slightly higher than inpatients of Department of Internal Medicine (63.6%). Good sleep can not only ensure adequate rest, increase hepatic blood flow, decrease oxygen consumption and proteolysis, but also contribute to hepatocyte regeneration and the recovery of liver disease (De Cruz *et al.* 2012; Rakalska 1952). However, not many studies concern the nursing method of the quality of sleep disorders all over the world (Rytz and Muntwyler 2012). In the clinic, we used Chinese medicine theory of emotion, informed patients did not too fear or tension due to prolonged healing of the disease. The patients should keep their minds open-minded, cheerful and joyful, which is in accordance with the physiological nature "stretch, smooth" of the liver. After cognitive behavioral intervention, the related knowledge of the disease of patients increased, and they could consciously change bad habits. Medication compliance was improved, and a virtuous cycle was generated. Interventions on patient's family and social support increased patient's self-confidence to overcome the disease. Family attitudes influence the development of the disease both in critically ill patients and virus carriers (Weng *et al.* 2011). Social and family support and encouragement have positive effects on patient medication according to doctor's advice (Tebbi 1993). 5-year survival rate was low in patients

Table 1: Comparison of anxiety and sleep quality in patients of both groups (score)

Group	n	Anxiety		Sleep quality	
		Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
Observational	80	56.98 \pm 4.23	39.02 \pm 3.81 ^{□□}	9.01 \pm 1.05	4.35 \pm 0.21 ^{*#}
Control	78	57.23 \pm 4.65	44.23 \pm 3.51	9.08 \pm 1.02	6.17 \pm 0.46

[□] $P < 0.05$, ^{*} $P < 0.05$, vs. pre-treatment; [△] $P < 0.05$, [#] $P < 0.05$, vs. control group

Table 2: Detection results of liver function indexes before and after treatment (mean \pm SD)

Group	Time	ALT (u/L)	TBil (μ mol/L)	Alb (g/L)
Observational (n=80)	Pre-treatment	164.5 \pm 68.4	44.1 \pm 13.8	32.5 \pm 6.7
	Post-treatment	51.3 \pm 18.7 [*]	21.8 \pm 10.7 [*]	36.9 \pm 4.7 [*]
Control (n=78)	Pre-treatment	167.8 \pm 72.3	51.3 \pm 16.4	30.2 \pm 3.4
	Post-treatment	78.3 \pm 42.6	46.8 \pm 13.6	29.8 \pm 4.3

^{*} $P < 0.05$, vs. control group post-treatment

with cirrhosis after hepatitis B, who easily suffered various discriminations, even unfair treatment in working life (Jang *et al.* 2015). Thus, these patients had tremendous mental anguish. The ear is the central meridian of assembled meridians. All twelve meridians traverse the ear. Auricular-plaster therapy can regulate the function of organs, enhance physical fitness, adjust attitude, and eliminate anxiety and tension (Ernst 2006). Clinical data verified that this new program of nursing interventions combined with auricular-plaster therapy can effectively relieve anxiety, stimulate the desire to survive and improve medication compliance in hepatitis B patient. Thus, social function and quality of life are significantly improved.

CONCLUSIONS

In conclusion, higher prevalence of anxiety and depression in patients with viral hepatitis B indicates more attention to psychiatric consultation, monitoring and therapies. Proper clinic therapy need to be considered seriously in order to improve significantly the life quality of patients with hepatitis B. With over 10 years clinical exploration experience, we found that targeted nursing intervention coupled with ear acupoint bean pressing may be effective Chinese medicine therapeutic method for positive improvement on the anxiety control and sleep quality of chronic hepatic B patients.

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