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Original Article

Clinical study on auricular point pressing beans combined with quetiapine in the treatment of alcohol-induced psychotic disorders

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Abstract: Objective: To evaluate the clinical efficacy and safety of auricular point pressing beans combined with quetiapine in the treatment of alcohol-induced psychotic disorders. Methods: A total of 82 patients were enrolled and divided into a control group (38 cases) treated with quetiapine alone and an observation group (44 cases) treated with quetiapine combined with auricular point pressing beans. The treatment duration was four weeks. Results: After the treatment, the observation group showed significantly better outcomes than the control group in terms of quality of life, positive and negative syndrome scale score, cognitive function, social functioning, and negative emotional state (all $P < 0.05$). The total effective rate in the observation group was 90.91%, significantly higher than that of the control group (73.68%, $P < 0.05$). Patient satisfaction (90.91%) and treatment compliance (88.64%) were also higher than those in the control group (73.68% and 71.05%, respectively; $P < 0.05$), while the incidence of adverse reactions was lower ($P < 0.05$). Univariate analysis identified age and duration of alcohol consumption as factors influencing treatment efficacy (both $P < 0.05$), which were further confirmed by multivariate logistic regression analysis. Conclusion: Auricular point pressing beans combined with quetiapine can significantly improve clinical symptoms and quality of life in patients with alcohol-induced psychotic disorders, with good safety and tolerability. However, treatment efficacy tends to be lower in older patients and those with a longer history of alcohol consumption.

Keywords: Psychiatric disorders due to alcohol, auricular pressure bean method, quetiapine, clinical efficacy, adverse reactions, influencing factors

Introduction

Alcohol-induced psychotic disorder is a psychiatric condition resulting from long-term heavy alcohol consumption. It is commonly encountered in psychiatric practice and is primarily characterized by hallucinations, delusions, and cognitive decline [1]. According to epidemiological data [2], most patients with alcohol-related psychiatric disorders exhibit high-risk behaviors such as violence and self-harm, posing serious threats to patients, families, and society.

From a pathophysiological perspective, the chronic neurotoxic effects of alcohol can disrupt neurotransmitter balance - particularly through abnormal activation of the dopaminergic system and dysregulation of the glutamatergic pathway - leading to the manifestation of psychotic symptoms [3]. Moreover, prolonged alcohol exposure can result in brain atrophy and cognitive deterioration, further exacerbating disease progression.

Currently, alcohol-related psychotic disorders remain incurable. Clinical management primarily relies on long-term use of antipsychotic medications such as quetiapine to control symptoms and prevent relapse [4]. Quetiapine, an atypical antipsychotic with multiple indications - including schizophrenia, bipolar disorder, anxi-

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ety, and insomnia - can alleviate hallucinations and delusions in patients with alcohol-induced psychotic disorders through its antipsychotic and anxiolytic effects [5]. However, its use is often accompanied by adverse reactions such as sedation, weight gain, dizziness, hypotension, blurred vision, constipation, and dry mouth [6]; long-term use may also increase the risk of diabetes and dyslipidemia. Therefore, exploring safer and more effective therapeutic options holds substantial clinical significance.

In recent years, traditional Chinese medicine (TCM) has gained increasing attention in mental health care. Auricular point pressing with beans, a non-pharmacological TCM therapy, exerts pressure on specific auricular points to regulate qi, blood, and the functional balance of the zang-fu organs [7]. Although direct evidence regarding its use in alcohol-induced psychiatric disorders is lacking, it has been widely applied in psychiatry to relieve anxiety and insomnia, with advantages such as minimal side effects and simple administration [8, 9].

Because monotherapy often yields suboptimal outcomes in alcohol-induced psychotic disorders [10], comprehensive treatment approaches integrating pharmacotherapy, psychotherapy, and TCM-based adjuvant interventions may offer superior benefits. However, no clinical studies have yet examined the combination of drug therapy with TCM adjunctive therapy for this condition. Therefore, this study investigated the clinical efficacy and safety of auricular point pressing with beans combined with quetiapine in patients with alcohol-induced psychotic disorders, aiming to establish a more effective integrated treatment strategy.

Materials and methods

Research object

A retrospective analysis was conducted on 82 patients diagnosed with alcohol-induced psychotic disorder who were admitted to Yichun Third People's Hospital between January 2023 and May 2025.

Inclusion criteria: (1) All patients met the ICD-10 diagnostic criteria for alcohol-induced mental disorders [11]; (2) Male patients aged 18-70 years; (3) Long-term heavy drinking for more than one year, with continuous drinking and psychiatric symptoms. Heavy drinking was defined as an average daily alcohol intake exceeding 25 g for males; (4) Patients who met treatment indications and were able to cooperate with the study; (5) Complete clinical and demographic data available.

Exclusion criteria: (1) History of abuse of other psychoactive substances; (2) Presence of organic brain disease or severe systemic illness; (3) Primary schizophrenia; (4) Pregnant or lactating individuals; (5) Known allergy to quetiapine; (6) Auricular skin inflammation or lesions.

This study was approved by the Ethics Committee of Yichun Third People's Hospital.

Grouping method

Patients were divided into two groups based on the treatment plan. The control group (n = 38) received routine quetiapine therapy, whereas the observation group (n = 44) received quetiapine combined with auricular point pressing.

Sample size calculation: The required sample size was estimated using the formula: $n = \frac{(Z_{1-\alpha/2}+Z_{1-\beta})^2\times 2\sigma^2}{\delta^2}$. (1) n represents the sample size of each group; (2) $Z_{1-\alpha/2}$ = 1.96; $Z_{1-\beta}$ = 1.28; (3) σ represents the standard deviation; (4) δ represents the expected difference between the group means; (5) Total sample size = 2n.

In this study, Z1-α/2 and Z1-β are 1.96 and 1.28, respectively, σ is 2, and δ is 1.4. Based on the formula for calculation, that is, $n = \frac{(1.96+1.28)^2\times 2\times 2}{1.4^2}$, n = 42. Therefore, 42 participants per group were required. After applying inclusion and exclusion criteria, a total of 82 eligible patients were enrolled.

Treatment protocols

All patients discontinued alcohol consumption and received symptomatic supportive therapy.

General management: Diazepam (Central China Pharmaceutical Co., Ltd., approval no. H42021528; 2.5 mg tablets) was administered orally at 5 mg three times daily and adjusted gradually to a maximum of 10 mg per dose, 3-4 times daily, depending on symptom severity, anxiety level, sleep quality, and withdrawal symptoms. Each dose adjustment interval was at least three days to ensure safety.

All patients additionally received the following medications: (1) Compound vitamin B tablets (Huazhong Pharmaceutical Co., Ltd., approval no. H42021412); (2) Liver-protective tablets (Sunflower Pharmaceutical Co., approval no. Z20003336; 0.35 g per tablet, four tablets per dose, three times daily); (3) Mecobalamin tablets (Jiangxi Qingfeng Pharmaceutical Co., Ltd., approval no. H20051440; 0.5 mg per tablet, one tablet per dose, three times daily).

Psychological counseling was provided twice weekly (30-45 min per session), focusing on identifying and modifying negative thought patterns related to alcohol dependence, improving emotional regulation, and enhancing confidence in treatment adherence.

Participants in the control group received quetiapine fumarate (Hunan Dongting Pharmaceutical Co., Ltd., approval no. H20010117; 0.1 g tablets) orally. The initial dose was 100 mg/day, titrated over the first week to an effective dose (defined as the dose producing ≥ 20% reduction in positive and negative syndrome scale (PANSS) score), generally ranging from 200 to 800 mg/day, administered twice daily. Dose adjustments were guided by symptom improvement, side effects, and plasma quetiapine concentration, which was monitored weekly using ultra-performance liquid chromatography-tandem mass spectrometry (UPLC-MS/MS).

Therapeutic plasma concentrations were maintained between 100 and 500 ng/mL: If the level was below 100 ng/mL but symptoms improved significantly, the dose was maintained; if response was inadequate, quetiapine was increased by 50-100 mg each time. If the level exceeded 500 ng/mL or adverse reactions occurred, the dose was reduced by 50-100 mg per adjustment until within range.

The treatment course lasted four weeks.

In addition to the control regimen, patients in the observation group received auricular point pressing with beans targeting the following acupoints: Heart, Shenmen, Spleen, Stomach, Liver, Gallbladder, Kidney, and Endocrine.

Procedure: Vaccaria segetalis (Wang-Bu-Liu-Xing) seeds (~5 mm diameter) were affixed to 1 × 1 cm adhesive tapes. After cleaning the auricle with iodophor, the therapist applied the seed-tapes to designated points using sterile tweezers. Patients were instructed to press each point every 4-6 hours for 1-2 minutes each time, maintaining pressure intensity corresponding to a Visual Analog Scale (VAS) score of 3-4 (mild pain, fullness, or warmth, yet tolerable).

If unilateral auricular points were used, stimulation was alternated weekly between sides. Bilateral auricular point pressing was performed twice weekly for four weeks.

To ensure procedural consistency, all practitioners received 20 hours of standardized training covering technique, pressure control, and patient instruction. In pre-trial reliability testing, inter-practitioner consistency achieved a Kappa coefficient of 0.85, indicating high procedural reliability.

Observed indexes

(1) General Data: Collected variables included age, comorbidities (hypertension and diabetes), duration of alcohol consumption, disease course, and baseline total scores for The World Health Organization Quality of Life Scale, Brief Version (WHOQOL-BREF), PANSS, and Montreal Cognitive Assessment (MoCA).

(2) Quality of Life: The World Health Organization Quality of Life Scale, Brief Version (WHOQOL-BREF) [12] was used to assess quality of life before and after treatment. This validated instrument includes environmental, social, psychological, and physiological, comprising 26 items rated on a five-point Likert scale (1-5). Higher scores indicate better quality of life. The internal consistency reliability (Cronbach's α) was 0.926 in previous studies [13] and 0.870 in this study.

(3) Psychiatric Symptoms: The PANSS [14] was administered to evaluate symptom severity before and after treatment. The PANSS consists of three subscales: positive symptoms, negative symptoms, and general psychopathology. Higher scores represent more severe symptoms. The Cronbach's α of the scale was 0.820, and 0.830 in this study.

(4) Clinical Efficacy: Treatment efficacy was determined according to PANSS score reduction

[15]. Cured: PANSS reduction rate > 75%; Markedly effective: 50-74%; Effective: 25-49%; Ineffective: < 25%. The total effective rate = (cured + markedly effective + effective)/total × 100%. PANSS total score reduction rate = (baseline total score - post-treatment total score)/(baseline total score - 30) × 100%.

(5) Cognitive Function: The MoCA was used to evaluate cognitive function before and after treatment. The scale includes naming (0-3), language fluency (0-3), visuospatial/executive ability (0-5), delayed recall (0-5), orientation (0-6), attention (0-6), and abstract thinking (0-2). Higher total scores indicate better cognitive performance. The Cronbach's α was 0.839 in previous research [16] and 0.840 in this study.

(6) Social Function: The Social Disability Screening Schedule (SDSS) was used to assess social function. The SDSS contains 10 items, each scored from 0 to 2 (0 = none or slight impairment, 1 = moderate impairment, 2 = severe impairment). Total scores range from 0-20, with higher scores indicating worse social function. The Cronbach's α was 0.786 in previous studies [17] and 0.810 in this study.

(7) Negative Emotions: The Hamilton Depression Scale (HAMD) and Hamilton Anxiety Scale (HAMA) were used to evaluate depressive and anxiety symptoms before and after treatment. HAMD includes 17 items, and HAMA includes 14 items, both score from 0-4. Higher scores indicate more severe symptoms. Reported Cronbach's α values were 0.829 for HAMD and 0.921 for HAMA [18, 19], while in this study, they were 0.850 and 0.840, respectively.

(8) Patient Satisfaction: Patient satisfaction was evaluated using a hospital-developed questionnaire (maximum score = 100). Scores of 90-100 indicated very satisfied, 70-89 satisfied, and ≤ 69 dissatisfied. Satisfaction rate = (Very satisfied + Satisfied)/Total × 100%.

(9) Treatment Compliance: Treatment compliance was evaluated by the proportion of patients taking medication as prescribed and completing the treatment plan, categorized as complete compliance, partial compliance, or non-compliance. Compliance rate = (Complete compliance + Partial compliance)/Total × 100%.

(10) Adverse Reactions: The incidence of adverse reactions - including dry mouth, dizziness, tremor, and hypertonia - was recorded during the treatment period.

(11) Multivariate Analysis of Efficacy: Patients were divided into effective and ineffective groups based on clinical efficacy. General and biochemical parameters before and after treatment were compared, including: 1) Hematological indices: white blood cell count (WBC), platelet count (PLT); 2) Hepatic function: alanine aminotransferase (ALT), aspartate aminotransferase (AST), total bilirubin (TBIL); 3) Renal function: serum creatinine (Scr), uric acid (UA); 4) Metabolic indices: fasting plasma glucose (FPG), total cholesterol (TC), triglyceride (TG), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C); 5) Enzymatic markers: creatine kinase (CK), lactate dehydrogenase (LDH).

Statistical analysis

All data analyses were performed using SPSS version 27.0 (IBM Corp., Armonk, NY, USA). Measurement data were expressed as mean ± standard deviation ($\bar{x} \pm SD$), and group comparisons were conducted using independent-samples t-tests. Categorical variables were expressed as rates (%), and compared using the chi-square (χ^2) test.

Multivariate logistic regression analysis was performed to identify factors influencing clinical efficacy in alcohol-induced psychotic disorders. The predictive performance of the model was evaluated by the area under the receiver operating characteristic curve (AUC), sensitivity, and specificity. A P value < 0.05 was considered statistically significant.

Results

General data analysis

No significant differences were observed between the observation and control groups in age, comorbidities (hypertension, diabetes), drinking duration, disease course, or baseline total scores of WHOQOL-BREF, PANSS, and MoCA (all P > 0.05). Detailed baseline characteristics are presented in **Table 1**. The patient enrollment process is shown in **Figure 1**.

Table 1. General data analysis of the two groups (mean ± SD)

Group	Control group (n = 38)	Observer group (n = 44)	χ^2/t	*P*
Age (years)	54.18 ± 4.32	54.36 ± 4.15	0.191	0.849
Hypertension (yes/no)	29/9	33/11	0.019	0.890
Diabetes (with/without)	25/13	30/14	0.053	0.818
Drinking time (years)	21.69 ± 3.27	22.07 ± 3.36	0.505	0.615
The course of disease (years)	6.53 ± 1.28	6.67 ± 1.32	0.457	0.649
WHOQOL-BREF total score	44.16 ± 7.57	44.14 ± 7.65	0.013	0.990
PANSS total score	86.74 ± 13.72	87.07 ± 13.24	0.111	0.912
MoCA total score	11.46 ± 1.31	11.54 ± 1.33	0.275	0.784

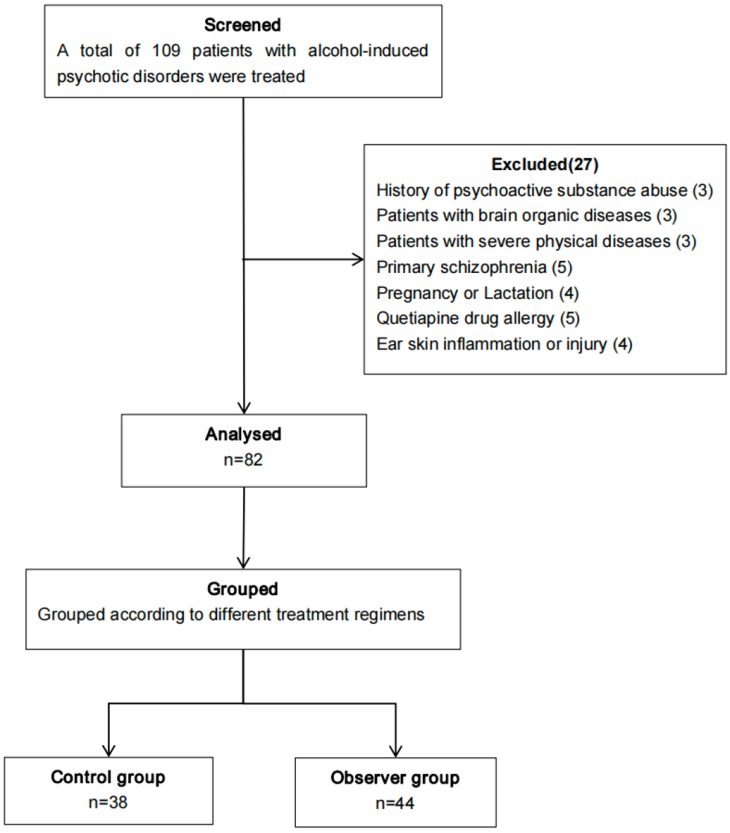

Figure 1. Patient screening flow chart.

Quality of life scores

After treatment, the observation group demonstrated significantly higher WHOQOL-BREF scores than the control group in multiple domains with statistically significant differences (all P < 0.05). See **Table 2**.

PANSS scores

Post-treatment, the observation group had significantly lower scores for positive symptoms, negative symptoms, and general psychopathology (all P < 0.05). See **Table 3**.

Clinical response

Following treatment, the total effective rate in the observation group was 90.91%, significantly higher than that of the control group (73.68%, P < 0.05). See **Figure 2**.

Cognitive function

Before treatment, no significant difference was observed between the two groups (P > 0.05). After treatment, MoCA scores in both groups improved significantly, with the observation group showing greater improvement than the control group (P < 0.05). See **Table 4**.

Social function

After treatment, SDSS scores in both groups decreased significantly, and the observation group had lower post-treatment scores than the control group (P < 0.05), indicating better social functioning. See **Figure 3**.

Emotional state

After treatment, both depressive and anxiety symptoms improved, with the observation group showing significantly lower HAMD (9.57 ± 1.12 vs. 12.74 ± 1.36, t = 11.596, P < 0.001) and HAMA scores (11.25 ± 1.23 vs. 17.59 ±

Table 2. Quality of life scores of the two groups before and after treatment (mean ± SD)

Group	Time	Control group (n = 38)	Observer group (n = 44)	t	*P*
Environment	Before treatment	10.94 ± 1.76	10.90 ± 1.82	0.113	0.911
	Post treatment	12.10 ± 2.13	13.41 ± 2.25	2.691	0.009
Society	Before treatment	9.42 ± 2.13	9.57 ± 2.15	0.305	0.761
	Post treatment	13.56 ± 2.12	14.83 ± 2.46	2.477	0.015
Psychology	Before treatment	11.36 ± 1.96	11.28 ± 1.87	0.202	0.840
	Post treatment	13.26 ± 2.11	14.84 ± 2.34	3.207	0.002
Physiology	Before treatment	12.42 ± 1.74	12.35 ± 1.81	0.180	0.858
	Post treatment	14.18 ± 2.32	15.42 ± 2.57	2.269	0.026

Table 3. PANSS scores of the two groups before and after treatment (mean ± SD)

Group	Time	Control group (n = 38)	Observer group (n = 44)	t	P
Positive symptoms	Before treatment	24.66 ± 4.27	24.73 ± 4.33	0.073	0.942
	Post treatment	13.45 ± 2.25	11.34 ± 2.18	4.297	< 0.001
Negative symptoms	Before treatment	21.37 ± 3.74	21.50 ± 3.43	0.166	0.868
	Post treatment	13.84 ± 2.31	12.06 ± 2.26	3.529	< 0.001
Psychopathology	Before treatment	40.71 ± 5.72	40.91 ± 5.49	0.160	0.873
	Post treatment	31.58 ± 4.15	28.36 ± 3.64	3.737	< 0.001

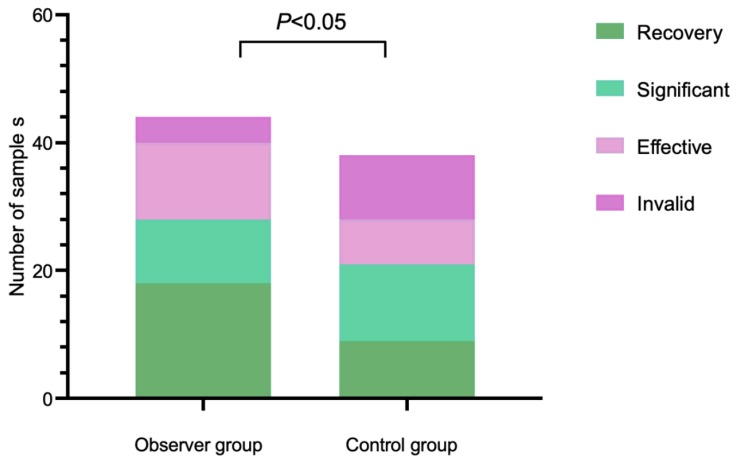

Figure 2. Comparison of clinical efficacy between the two groups of patients.

2.16, t = 15.982, P < 0.001) than the control group. See **Table 5**.

Satisfaction, treatment adherence, and adverse reactions

The total satisfaction rate was higher in the observation group (90.91%) than that in the control group (73.68%, P < 0.05). Treatment adherence was also superior in the observation group (88.64% vs. 71.05%, P < 0.05). Adverse reactions occurred in 3 cases in the observation group and 9 cases in the control group, with a statistically significant difference (P < 0.05). See **Table 6**.

Univariate analysis

Patients were divided into effective (n = 68) and ineffective (n = 14) groups based on treatment outcomes. Univariate analysis revealed that age and duration of alcohol consumption differed significantly between the two groups (P < 0.05). See **Table 7**.

Multiple logistic regression

Logistic regression identified age and drinking duration as independent risk factors affecting clinical efficacy. Higher age (OR = 1.214, 95% CI = 1.009-1.462) and longer drinking duration (OR = 1.472, 95% CI = 1.149-1.885) were associated with poorer treatment outcomes (both P < 0.05). Specifically, each additional year of age increased the risk of poor efficacy by 1.214 times, and each additional year of drinking increased the risk by 1.472 times. These findings suggest that elderly and long-term drinkers may respond less favorably to treatment, underscoring the importance of early intervention and sustained abstinence. See **Figure 4** and **Table 8**.

Table 4. Comparison of MoCA scale scores between the two groups (mean ± SD)

Group	Time	Control group (n = 38)	Observer group (n = 44)	t	P
Visual space and executive function	Before treatment	2.83 ± 0.20	2.91 ± 0.23	1.671	0.099
	Post treatment	4.52 ± 0.25	5.34 ± 0.28	13.987	< 0.001
Calculation and directional force	Before treatment	2.87 ± 0.34	2.84 ± 0.32	0.377	0.707
	Post treatment	4.54 ± 0.31	5.36 ± 0.35	11.079	< 0.001
Attention and concentration and memory	Before treatment	2.03 ± 0.18	2.08 ± 0.20	1.251	0.215
	Post treatment	3.58 ± 0.26	4.45 ± 0.35	12.651	< 0.001
Abstract thinking	Before treatment	1.88 ± 0.33	1.83 ± 0.28	0.729	0.468
	Post treatment	3.47 ± 0.50	4.36 ± 0.42	8.769	< 0.001
Language expressiveness	Before treatment	1.85 ± 0.25	1.87 ± 0.30	0.295	0.769
	Post treatment	4.12 ± 0.45	5.11 ± 0.58	8.496	< 0.001

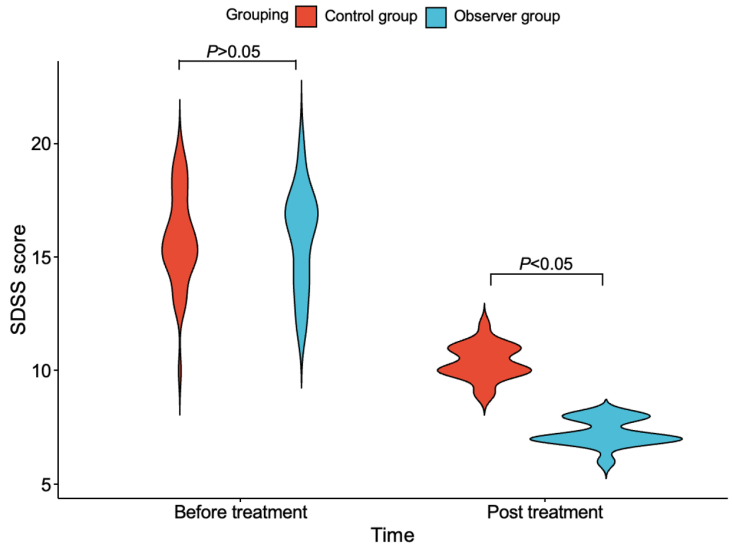

Figure 3. SDSS scores of the two groups.

ROC curve analysis of logistic regression model

To assess the predictive performance of logistic regression model, the ROC curve analysis was performed. Age: AUC = 0.706 (95% CI = 0.575-0.838), specificity = 0.632, sensitivity = 0.786, Youden's index = 0.418, positive predictive value = 34.20%, negative predictive value = 92.30%.

Drinking duration: AUC = 0.776 (95% CI = 0.655-0.898), specificity = 0.706, sensitivity = 0.829, Youden's index = 0.429, positive predictive value = 41.30%, negative predictive value = 94.20%. Combined prediction (age + drinking duration): AUC = 0.818 (95% CI = 0.716-0.920), specificity = 0.712, sensitivity = 0.879, Youden's index = 0.515, positive predictive value = 43.45%, negative predictive value = 95.80%.

These results indicate that the combined model has superior predictive performance. See **Figure 5**.

Discussion

Alcohol is a water-soluble substance with neurotoxicity. Long-term abuse not only causes vitamin deficiency and malnutrition but also significantly increases the risk of multiple organ dysfunction, particularly affecting the nervous system. Cerebral cortex stimulation by alcohol can induce mental disorders, with alcohol-induced psychotic disorders typically occurring during long-term heavy drinking. In the absence of consciousness disturbance, patients may present with hallucinations, delusions, emotional disorders, and psychomotor excitement or inhibition, among which alcohol hallucinations and jealousy delusions are more common [20]. These disorders usually alleviate within days after alcohol cessation, but some patients may experience prolonged courses with poor recovery [21]. Additionally, the disease imposes a heavy burden, with increasing incidence and hospitalization rates, bringing substantial economic and psychological pressure to patients and their families [22]. Thus, timely medical intervention, individualized treatment plans, and long-term rehabilitation support are crucial for symptomatic patients.

Table 5. Comparison of emotional state between the two groups (mean ± SD)

Index	Time	Control group (n = 38)	Observer group (n = 44)	t	P
HAMD score	Before treatment	24.27 ± 2.58	24.46 ± 2.62	0.322	0.748
	Post treatment	12.74 ± 1.36	9.57 ± 1.12	11.596	< 0.001
HAMA score	Before treatment	36.39 ± 4.22	36.45 ± 4.15	0.060	0.952
	Post treatment	17.59 ± 2.16	11.25 ± 1.23	15.982	< 0.001

Table 6. Comparison of satisfaction, treatment adherence, and adverse reactions [n (%)]

Item	Index	Control group (n = 38)	Observer group (n = 44)	χ^2	P
Satisfaction evaluation	Very satisfactory	8 (21.05)	19 (43.18)		
	General satisfaction	20 (52.63)	21 (47.73)		
	Dissatisfied	10 (26.32)	4 (9.09)		
	Satisfaction	28 (73.68)	40 (90.91)	4.273	0.039
Evaluation of treatment compliance	Full compliance	10 (26.32)	20 (45.56)		
	Partial compliance	17 (44.73)	19 (43.18)		
	Non-compliance	11 (28.95)	5 (11.36)		
	Compliance	27 (71.05)	39 (88.64)	4.014	0.045
Incidence of adverse reactions	Xerostomia	2 (5.26)	1 (2.27)		
	Dizziness	3 (7.89)	1 (2.27)		
	Tremor	2 (5.26)	0 (0.00)		
	Hypermyotonia	2 (5.26)	1 (2.27)		
	Total rate	9 (23.68)	3 (6.82)	4.643	0.031

Table 7. Single factor analysis [n (%), mean ± SD]

Group	Responsive group (n = 68)	Ineffective group (n = 14)	χ^2/t	P
Age (years)	53.24 ± 4.28	55.86 ± 2.91	2.184	0.032
Hypertension (yes/no)	54/14	8/6	3.122	0.077
Diabetes (with/without)	44/26	9/5	0.010	0.919
Drinking time (years)	19.27 ± 2.84	22.64 ± 3.42	3.896	< 0.001
The course of disease (years)	6.42 ± 1.25	6.74 ± 1.53	0.834	0.407
WBC ($\times 10^9$/L)	6.84 ± 1.45	6.67 ± 1.98	0.364	0.717
PLT ($\times 10^9$/L)	165.70 ± 18.23	167.54 ± 19.34	0.341	0.734
ALT (U/L)	48.51 ± 5.37	49.75 ± 5.64	0.778	0.439
AST (U/L)	61.45 ± 7.82	58.41 ± 6.56	1.355	0.179
TBIL (μmol/L)	16.17 ± 3.24	17.31 ± 3.19	1.210	0.230
Scr (μmol/L)	65.35 ± 11.26	65.86 ± 10.45	0.158	0.875
UA (μmol/L)	412.97 ± 58.60	408.57 ± 61.74	0.254	0.801
FPG (mmol/L)	8.13 ± 1.24	7.44 ± 1.05	1.953	0.054
TC (mmol/L)	4.73 ± 1.14	5.33 ± 1.27	1.747	0.084
TG (mmol/L)	1.68 ± 0.32	1.75 ± 0.35	0.740	0.461
LDL-C (mmol/L)	2.84 ± 0.63	3.21 ± 0.75	1.916	0.059
HDL-C (mmol/L)	1.65 ± 0.46	1.78 ± 0.40	0.973	0.334
CK (U/L)	278.77 ± 35.69	281.34 ± 34.84	0.246	0.807
LDH (U/L)	227.42 ± 43.27	228.42 ± 42.70	0.079	0.937

PS: WBC: white blood cell count; PLT: platelet; ALT: alanine aminotransferase; AST: aspartate aminotransferase; TBIL: total bilirubin; Scr: serum creatinine; UA: uric acid; FPG: fasting blood glucose; HbA1: glycosylated hemoglobin; TC: total cholesterol; TG: triglyceride; LDL-C: low density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol; CK: creatine kinase; LDH: lactate dehydrogenase.

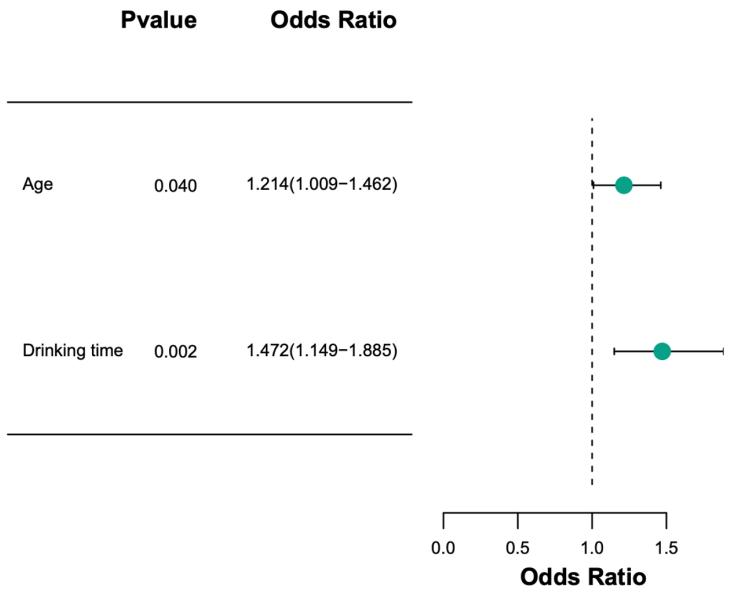

Figure 4. Multivariate logistic regression analysis.

Quetiapine, a novel atypical antipsychotic, exerts pharmacological effects by interacting with multiple central nervous system neurotransmitter receptors [23]. It alleviates hallucinations and delusions by antagonizing dopamine D2 receptors to reduce excessive dopamine transmission [18]. With high affinity for 5-hydroxytryptamine (5-HT2A) receptors, its blockade enhances prefrontal cortex dopamine release and D1 receptor activity, improving negative symptoms and cognitive function [24]. Quetiapine also inhibits α2 and 5-HT2A receptors to promote monoamine neurotransmitter release (alleviating depression) and blocks α1 and histamine H1 receptors to reduce mania [25]. Orally administered quetiapine is well absorbed, with food having no significant impact on bioavailability; plasma concentrations peak at 1-2 hours post-administration, with an 83% plasma protein binding rate and a 7-hour average half-life [26]. Despite its efficacy in various mental disorders, monotherapy may be limited in alcohol-induced psychotic disorders [27]. Therefore, treatment should include correcting patients' misconceptions, facilitating emotional release, improving behaviors to reduce relapse, and combining with other therapies to enhance efficacy.

As noted in *Lingshu Kouwen*: "The ear is the gathering of the pulse", indicating its rich neurovascular network and close connections to internal organs and the cerebral cortex [28]. Auricular point stimulation promotes qi-blood circulation, with specific acupoints exerting distinct effects: Shenmen acupoint sedates the mind; sympathetic points regulate the autonomic nervous system and balance yin-yang; occipital acupoints modulate neurotransmitters to regulate qi and emotions; subcortical and brain points induce sedation via reflex mechanisms; stomach acupoints strengthen the spleen-stomach and improve appetite; and heart acupoints calm the mind [29-31]. These acupoints synergistically tranquilize the mind and regulate visceral function. From a modern medical perspective, auricular point pressing with beans integrates TCM meridian theory, physiology, and anatomy [32]. Targeted stimulation optimizes meridian qi-blood dynamics, unblocks meridians, and regulates visceral function [32], demonstrating efficacy in insomnia, depression, anxiety, and obsessive-compulsive disorder [33].

This study evaluated the efficacy and safety of auricular point pressing with beans combined with quetiapine in alcohol-induced psychotic disorders. The observation group achieved a 90.91% total efficacy rate, significantly higher than the control group's 73.68%. Post-treatment, the observation group showed superior WHOQOL-BREF scores (environmental, social, psychological, and physiological dimensions) and lower PANSS scores (positive, negative, and psychopathological symptoms) compared to the control group. These results confirm the combined therapy's advantage in improving symptoms and quality of life. In TCM, psychiatric disorders belong to "madness", with Su Wen Tong Ping Xu Lun stating: "Epilepsy is caused by prolonged reversal, imbalance of the five organs, and blockage of the six organs", and Su Wen: The Great Treatise on the Ultimate Truth noting: "All forms of mania belong to fire" [34]. These highlight phlegm-fire stagnation and visceral yin-yang imbalance as key pathological mechanisms. TCM experts attribute madness to seven-emotion internal injuries, dietary disorders, or constitutional insufficien-

Table 8. Multivariate logistic regression analysis

Factors	β	SE	Wald χ^2	P	OR (95% CI)
Age/years	0.194	0.095	4.201	0.040	1.214 (1.009-1.462)
Drinking time/years	0.386	0.126	9.369	0.002	1.472 (1.149-1.885)

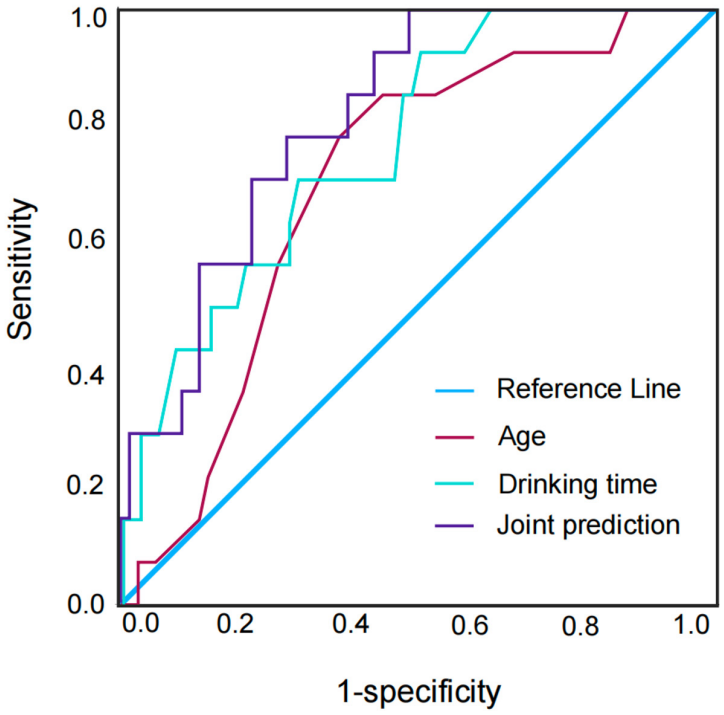

Figure 5. ROC curve of prediction model.

cy, leading to phlegm-fire stagnation, qi-blood/yin-yang imbalance, visceral dysfunction, and mental disturbance [34]. Thus, treatment emphasizes harmonizing visceral yin-yang, unblocking meridians, resolving phlegm-stasis, and calming the mind.

As an external TCM therapy, auricular point pressing with beans regulates qi-blood circulation and visceral function via specific ear acupoints to unblock meridians and balance yin-yang [35]. Qi-regulating acupoints (stomach, spleen, liver) strengthen the spleen-stomach and relieve pain; sympathetic, Shenmen, and endocrine acupoints exert analgesic and antispasmodic effects, regulate the vagus nerve, improve sleep, and alleviate tension [31, 32]. Acupoint combinations reduce anxiety and pain, enhancing quality of life [36, 37]. In this study, the combined therapy effectively relieved positive/negative symptoms and improved quality of life (all WHOQOL-BREF dimensions) by integrating quetiapine's antipsychotic effects and auricular therapy's regulatory functions to address both symptoms and root causes. Post-treatment, the observation group showed higher MoCA scores but lower SDSS/HAMD/HAMA scores than the control group. Quetiapine improves dopamine balance to enhance executive function [38], while auricular therapy regulates cerebral excitation-inhibition balance and neurotransmitter secretion/transmission to improve cognitive and social function [39, 40]. From a TCM perspective, it regulates visceral function (especially heart and liver, which govern spirit and qi dispersion), nourishes heart qi, and dredges liver qi to improve emotional states [41].

The observation group also demonstrated higher patient satisfaction and treatment compliance. This may be due to superior symptom relief and quality of life improvement, alongside the non-invasive, easy-to-use, and side-effect-free nature of auricular therapy, reducing treatment discomfort compared to oral medications and enhancing adherence [42].

Adverse reactions (dry mouth, dizziness, tremor, increased muscle tension) occurred in 3 cases (observation group) and 9 cases (control group), with a significantly lower incidence in the observation group. This confirms the high safety of auricular therapy. Notably, combined use with quetiapine reduces adverse reactions. While drug dose typically correlates with adverse reactions, this study could not confirm the impact of quetiapine dose differences, which may also be influenced by individual patient factors. Future research will explore dose effects. Adverse reactions were manageable: dry mouth improved with frequent small

water intake (avoiding coffee/alcohol); dizziness relieved by rest or symptomatic medication; tremor alleviated by physical therapy or dose adjustment; and increased muscle tension addressed via rehabilitation training, hot compresses, or medication.

This study identified age and drinking duration as factors influencing therapeutic efficacy. Univariate analysis showed significant differences in these variables between effective and ineffective groups, with multivariate logistic regression confirming them as risk factors. ROC curve analysis revealed AUC values of 0.706 (age) and 0.776 (drinking duration), with drinking duration demonstrating higher discriminative power. Older age may reduce physical function and drug metabolism, leading to drug accumulation and impaired efficacy [43], and elderly patients often have comorbidities that complicate treatment [44]. Longer drinking duration indicates greater alcohol dependence and irreversible neurostructural/functional damage, increasing treatment difficulty [45]. Thus, clinical practice should prioritize personalized care for elderly and long-term drinking patients, including dose adjustment, enhanced psychotherapy, and rehabilitation training.

This study innovatively combines auricular point pressing (TCM external therapy) with quetiapine (western medicine), providing new approaches for alcohol-induced psychotic disorder treatment. It comprehensively evaluated symptom improvement and quality of life, identifying age and drinking duration as efficacy influencers to guide personalized treatment. Limitations include small sample size and single-center design, which may affect result generalizability. Future studies should expand sample size and conduct multi-center research to verify the combined therapy's efficacy and safety.

Conclusion

Auricular point pressing with beans combined with quetiapine significantly improves positive and negative symptoms in alcohol-induced psychotic disorder patients, demonstrating good safety and clinical value. Multivariate logistic regression identified advanced age and long drinking duration as risk factors for treatment outcomes. Therefore, personalized and comprehensive strategies are recommended for these patients to enhance efficacy and improve prognosis.

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Disclosure of conflict of interest

None.

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