Deanxit can improve the dizziness, anxiety, and quality of life of patients with chronic subjective dizziness

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Received February 1, 2021; Accepted February 21, 2021; Epub August 15, 2021; Published August 30, 2021

Abstract: Objective: This study was designed to analyze the clinical effectiveness of Deanxit (DEA) for treating chronic subjective dizziness (CSD). Methods: A total of 110 CSD patients (all from a community survey) admitted to our hospital from August 2018 to August 2020 were recruited as the study cohort. Among them, 60 who underwent DEA treatment were placed in the research group (RG) and 50 who underwent basic treatment were placed in the control group (CG). The two groups’ efficacy, their dizziness disability rating scale (DHI) scores, the improvement in their clinical symptoms (duration of dizziness, frequency of dizziness attacks), their anxiety and depression (i.e., their Hamilton Anxiety Scale (HAMA) scores) and their Hamilton Depression Scale (HAMD)) scores, their sleep quality and their quality of life (short form 36 (SF-36) health survey scores) were observed and compared. Results: Compared with the CG, the DHI scores, the dizziness durations, the number of dizziness attacks and the HAMA and HAMD scores in the RG were markedly lower than they were in the CG, and the sleep quality levels and SF-36 scores were higher than they were in the CG. Conclusion: DEA treatment helps to improve the dizziness, anxiety, and quality of life of CSD patients.

Keywords: Deanxit, chronic subjective dizziness, dizziness, anxiety, quality of life

Introduction

Chronic subjective dizziness (CSD), characterized by persistent non-spontaneous dizziness, is a chronic nervous system disease and can have extremely serious negative effects on patients’ normal lives and work [1, 2]. The potential inducement of CSD may include psychological factors such as anxiety and an introverted personality, and pathological factors such as vestibular neuronitis and benign paroxysmal positional vertigo [3-5]. The treatment strategies generally consist of vestibular rehabilitation, cognitive behavioral therapy, and drug intervention. This study mainly explores the efficacy of drug intervention in CSD [6]. In recent decades, people’s lifestyles have undergone tremendous changes. With the increase in everyday stress, the risk of CSD is increasing daily, and CSD is also occurring among younger people [7, 8]. Therefore, studying the CSD treatment methods and analyzing their clinical advantages can help optimize the clinical treatment choices, so it is of great practical significance for preventing the condition and improving its treatment efficiency.

Deanxit (DEA) is a mixture of melitracen and flupentixol. It has anti-anxiety and anti-depression effects and helps to improve emotional diseases [9, 10]. At the moment, DEA is known to be used to treat gastroesophageal reflux disease, depression, tinnitus, somatic pain disorder, etc., but its clinical effectiveness for CSD has not been clarified [11-14]. As one of the main components of DEA, melitracen can act on the presynaptic membrane of the body, which helps to increase the concentration of norepinephrine and 5-HT related receptors in the synaptic space [15]. However, flupentixol can directly act on the related receptors on the postsynaptic membrane and stimulate dopamine secretions in the synaptic space [16, 17]. Both of them can promote the improvement of the disease and take effect quickly, thus avoiding drug dependence addiction with a certain biosafety [18, 19].
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We believe that DEA may have a good effect on CSD, and it may help to improve patients’ dizziness, negative emotions, sleep, and quality of life. We conducted this research to provide new treatment insights.

Materials and methods

General data

A total of 110 CSD patients admitted to the Fourth People's Hospital of Kunshan from August 2018 to August 2020 were recruited for the study after we conducted a community survey. Among them, 60 who underwent DEA treatment were placed in the research group (RG), and 50 who underwent basic treatment were placed in the control group (CG). The CG included 18 males and 32 females, ranging in age from 35-67 years old, with an average age of (49.38±12.69) years. The RG included 15 males and 45 females, ranging in age from 38-69 years old, (52.74±13.95) years old on average. This research was approved by the Ethics Committee of our hospital, and all the patients provided a signed informed consent form and understood the research objective.

Inclusion and exclusion criteria

The inclusion criteria are as follows: patients for whom dizziness was their main clinical symptom, adult patients who were diagnosed with CSD, patients who provide a written informed consent form, and patients who received any treatment.

The exclusion criteria were as follows: patients with significant structural lesions of the brain, patients comorbid with or with systemic diseases, patients with a malignancy, patients suffering from mental illness or a cognitive impairment, women who were lactating or pregnant, alcoholics or drug abusers.

Treatment methods

RG: DEA was taken orally once every morning and at noon, one tablet at a time. Mesylate was taken orally every morning and evening, one tablet each time. In addition to the two medicines, basic treatment was also provided.

CG: Mesylate was taken orally every morning and evening, one tablet at a time. In addition to the medicine, basic treatment was also provided.

Efficacy evaluation

Recovery: The dizziness disappeared completely. Markedly effective: The dizziness was significantly alleviated, and life and work were not affected. Effective: The dizziness was relieved, but work was affected. Ineffective: The dizziness was not improved or was even aggravated.

Outcome measures

The efficacy, dizziness disability rating scale (DHI) [20], the improvement in the clinical symptoms (duration of dizziness, frequency of dizziness attacks), the anxiety and depression (the HAMA and HAMD scores) [21], the sleep quality and quality of life (the SF-36 scale scores) [22] of in both groups were observed and compared.

Relevant questionnaires were collected through a community survey and a medical record inquiry.

(1) The dizziness disability rating scale (DHI) was evaluated quantitatively from three aspects: body, emotions, and function. The scores ranged from 0-100, and the higher the score, the greater the vertigo disorder. 0-30 indicates mild, 31-60 indicates moderate, and 61-100 indicates serious.

(2) The improvement in the clinical symptoms was evaluated by recording the duration and frequency of the dizziness.

(3) The anxiety and depression were evaluated using the Hamilton Anxiety Scale (HAMA) and the Hamilton Depression Scale (HAMD). Serious anxiety: for the HAMA score, the total score is ≥ 29 points; significant anxiety: the total score is ≥ 21; there must be anxiety: ≥ 14; there may be anxiety: ≥ 7; no anxiety symptoms: < 7. Severe depression: in the HAMD scores, the total score is ≥ 35 points; there may be mild or moderate depression: the total score is ≥ 20; there may be depression: 8-20; no depressive symptoms: < 8.

(4) Each patient’s sleep quality in the past month was assessed using the Pittsburgh Sleep Quality Index Questionnaire (PSQI) [23].
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The score range was 0-27, and > 7 points indicated that there was a sleep disorder.

(5) The quality of life of the patients before and after the treatment was assessed using the short form 36 (SF-36) health survey from eight dimensions: physiological function (PF), role physical (RP), bodily pain (BP), general health (GH), vitality (VT), social function (SF), role emotional (RE), and mental health (MH). Among them, the score is 0-100, and the higher the score, the higher the quality of life of each dimension.

Statistical analysis

The data were analyzed and pictures were drawn using GraphPad Prism 6 (GraphPad Software, San Diego, United States). The count data were represented by number/percentage (n%), and the measurement data were expressed as mean ± SEM. The inter-group comparisons among the count data were assessed using chi-square tests, and continuous correction chi-square tests were used when the theoretical frequency was less than 5. The inter-group comparisons between the measurement data was analyzed using independent-samples T tests, and the comparisons before and after the treatment within groups was evaluated using paired T tests. P < 0.05 indicated a statistically significant difference.

Results

Baseline data

There were no significant differences in terms of gender, average age, marital status, education level, occupation, history of vertigo, course of the disease, or place of residence between the two groups (P > 0.05) (Table 1).

The total effective rate of the RG is higher than in the CG

We investigated the efficacy of the two groups of patients after 4 and 8 weeks of treatment. The data showed that the total effective rates of the CG and RG were 56.00% and 80.00% after 4 weeks of treatment, and 68.00% and 91.67% respectively after 8 weeks of treatment. The total effective rates of the RG were higher than the total effective rates of the CG (P < 0.05) (Tables 2, 3).

The vertigo and disability levels in the RG were lower than they were in the CG

We also examined the vertigo and disability levels before and after the treatment using the DHI scores. The results showed that there was no significant difference in the DHI scores between the two groups before the treatment (P > 0.05), but the scores in the RG were lower than the scores in the CG (P < 0.05) (Figure 1).

The improvement in the clinical symptoms and the negative emotions in the RG was better than it was in the CG

We also observed and recorded the durations and frequencies of dizziness in the two groups.

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We also observed and recorded the durations and frequencies of dizziness in the two groups.
Table 2. The clinical efficacy in the two groups after 4 weeks of treatment [n (%)]

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Recovery</th>
<th>Markedly effective</th>
<th>Effective</th>
<th>Ineffective</th>
<th>Total effective rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>50</td>
<td>0 (0.00)</td>
<td>6 (12.00)</td>
<td>22 (44.00)</td>
<td>22 (44.00)</td>
<td>56.00</td>
</tr>
<tr>
<td>Research group</td>
<td>60</td>
<td>10 (16.67)</td>
<td>22 (36.67)</td>
<td>16 (26.67)</td>
<td>12 (19.99)</td>
<td>80.00</td>
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<td>(\chi^2) value</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>22.307</td>
</tr>
<tr>
<td>(P) value</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Table 3. The clinical efficacy in the two groups after 8 weeks of treatment [n (%)]

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Recovery</th>
<th>Markedly effective</th>
<th>Effective</th>
<th>Ineffective</th>
<th>Total effective rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>50</td>
<td>2 (4.00)</td>
<td>11 (22.00)</td>
<td>21 (42.00)</td>
<td>16 (32.00)</td>
<td>68.00</td>
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<tr>
<td>Research group</td>
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<td>22 (36.67)</td>
<td>20 (33.33)</td>
<td>5 (8.33)</td>
<td>91.67</td>
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<td>(\chi^2) value</td>
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<td>-</td>
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<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Figure 1. The vertigo and disability levels in the RG were lower than they were in the CG. Note: *\(P < 0.05\); **\(P < 0.01\).

The data show that there were no significant differences in the durations or numbers of dizziness attacks before the treatment (\(P > 0.05\)), but the two indexes decreased after the treatment, and the two levels in the RG were lower than they were in the CG, and the differences were statistically significant (\(P < 0.05\)). On the other hand, we evaluated the two groups’ anxiety and depression levels using their HAMA and HAMD scores. The data showed that there was no significant difference in HAMA and HAMD scores between the two groups before the treatment (\(P > 0.05\)), but these two indexes were decreased after the treatment, and the two indexes in the RG were lower than they were in the CG. The differences were statistically significant (\(P < 0.05\)) (Figure 2).

The improvement in the sleep quality in the RG was better than it was in the CG.

We assessed the sleep quality of the two groups using their PSQI scores. They showed that there was no significant difference in the PSQI scores before the treatment (\(P > 0.05\)), but the scores decreased after the treatment, and the scores in the RG were lower than the scores in the CG, with statistical significance (\(P < 0.05\)) (Figure 3).

The quality of life in the RG was higher than the quality of life in the CG.

We assessed the quality of life in the two groups using their SF-36 scores. The scores revealed that there was no significant difference in SF-36 scores before the treatment (\(P > 0.05\)). After the treatment, the SF-36 scores were increased, and the SF-36 scores in the 8 dimensions in the RG were higher than they were in the CG, with statistical significance (\(P < 0.05\)) (Figure 4).

Discussion

CSD, a chronic dizziness disease, may cause varying degrees of challenges in patients’ daily life and work [24, 25]. This research was mainly based on the clinical advantages of DEA in CSD patients, so it is of great significance for optimizing patients’ drug treatment strategies and improving their quality of life.

The CSD patients treated with DEA were placed in the RG, and the patients treated with mesylate were placed in the CG. Mesylate, formulat-
Figure 2. The improvement in the clinical symptoms and the negative emotions in the RG was better than it was in the CG. A. After the treatment, the duration of the dizziness in the RG was shorter than it was before the treatment, and it was also shorter than it was in the CG. B. After the treatment, compared with before the treatment, the frequency of the dizziness attacks in the RG was reduced, and the duration of the dizziness was lower than it was in the CG. C. The HAMA scores of the RG were decreased after the treatment, and the scores were also lower than the scores in the CG. D. The HAMD scores in the RG decreased after the treatment, and the scores were also lower than the scores in the CG. Note: *P < 0.05; **P < 0.01.

Figure 3. The improvement in the sleep quality in the RG was better than it was in the CG. Note: *P < 0.05; **P < 0.01.

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ed as a betahistine mesylate tablet, has been used in the treatment of vestibular paroxysmal psychosis, and it has a certain relieving effect on vertigo [26]. According to our findings, the treatment efficacy in the two groups was improved after the treatment, and the treatment efficacy in the RG was better than it was in the CG after 4 and 8 weeks, suggesting that DEA has a certain good efficacy in treating CSD. Then, the DHI data showed that the DHI
Figure 4. The quality of life in the RG was higher than it was in the CG. A. After the treatment, the PF scores in the RG were higher than they were in the CG. B. After the treatment, the RP scores in the RG were higher than they were in the CG. C. After the treatment, the BP scores in the RG were higher than they were in the CG. D. After the treatment, the GH scores in the RG were higher than they were in the CG. E. After the treatment, the VT scores in the RG were higher than they were in the CG. F. After the treatment, the SF scores in the RG were higher than they were in the CG. G. After the treatment, the RE scores in the RG were higher than they were in the CG. H. After the treatment, the MH scores in the RG were higher than they were in the CG. Note: *P < 0.05; **P < 0.01.
scores in both groups were lower after the treatment, and the scores in the RG were lower than the scores in the CG after the treatment, indicating that the levels of vertigo disability of the patients treated with DEA were reduced, and that DEA helped to cure the patients. We also evaluated the improvement in the clinical symptoms of the patients in both groups from two aspects, namely the dizziness durations and the number of dizziness attacks. The data revealed that the patients' dizziness durations and attack times were shortened or decreased after the treatment, and these two indexes in the RG were shorter or lower than they were in the CG after the treatment. This suggests that DEA helps to improve CSD patients' vertigo symptoms.

In terms of the negative emotions, we quantified the anxiety and depression levels in the two groups of patients using their HAMA and HAMD scores. The data revealed that the HAMA and HAMD scores decreased after the treatment, and the two indexes in the RG were lower than the two indexes in the CG after the treatment, suggesting that the negative emotions of CSD patients can be inhibited under the influence of DEA. We also quantified the sleep quality using the PSQI score. The results showed that the PSQI scores were lower after the treatment, and the scores of the RG were lower than the scores in the CG after the treatment, an indication that DEA is more beneficial at improving the sleep quality of CSD patients. Finally, we also evaluated the patients' quality of life using the SF-36 scale. Our data indicated that the SF-36 scores in both groups were higher after the treatment, and the scores in the eight dimensions in the RG were higher than the scores in the eight dimensions in the CG after the treatment, suggesting that DEA also contributed greatly to the improvement of the quality of life of the CSD patients.

Although our research has confirmed that DEA can improve the dizziness, anxiety, and quality of life of CSD patients to different degrees, there is still room for improvement. First of all, we can further supplement the clinical advantages of the combined medication on CSD based on DEA. Second, we can expand on the basic research and further study the mechanism of DEA in CSD. Furthermore, we can also explore the application of DEA in the long-term efficacy of CSD, thereby further tracking its clinical advantages.

To sum up, DEA can improve the efficacy, dizziness, negative emotions, sleep and quality of life of CSD patients, and it is clinically effective.

Acknowledgements

This study was financially supported by the Kunshan Science and Technology Project (0052018ZX03).

Disclosure of conflict of interest

None.

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