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GABA Tea Helps Sleep

Dear Editor:

Insomnia is a highly prevalent disorder. It impairs patient's physical and mental health, as well as their daily functions. Medications for insomnia include benzodiazepines (BZDs) and non-BZDs. However, both BZDs and non-BZDs tend to impair learning and memory. It has been found that about half of insomniacs have tried to stop treatment.¹ Improved knowledge regarding self-help treatments would promote healthy sleep. Sawai et al. found that cycling treatment of anaerobic and aerobic incubation increases the content of γ -aminobutyric acid (GABA) in tea shoots.² Employing special cycling treatment, GABA tea was found to have higher GABA contents than normal teas. Herein, a case is presented in which a patient who suffered from insomnia had improved sleep after consuming GABA tea.

Mr. A., a 42-year-old, had no history of substance abuse, major trauma, or systemic disease. He had been intermittently suffering from mixed insomnia for months. Mr. A. complained of interrupted sleep due to nocturnal urination, early awakening around 4 AM, and mild back pain. The visual analog scale was rated as 3. No other existing psychiatric disorders such as depression, anxiety, or psychosis were traced. He kept a regular, ordinary daily schedule. Coffee, tea, and alcohol were all avoided. He sought help from a psychiatrist. His prescribed medications included different combinations of clonazepam, zolpidem, and trazodone; however, insomnia persisted. He was referred to the sleep clinic for further evaluation, without any medications 2 weeks before the visit. The score for the Pittsburgh sleep quality questionnaire (PSQI) was 8. Polysomnography (PSG) was performed, with an apnea hypopnea index (AHI) of 10.2. Taking the advice of a relative, Mr. A began drinking a glass (about 250 mL) of GABA tea before sleep. Mr. A reported no more interrupted sleep, early awakening, or back pain the next morning. He continued using GABA tea for 1 month, and the insomnia improved, without mention of any side-effects. PSQI was reduced to 2. PSG was performed again. A comparison of the PSG parameters before and 1 month after using GABA tea is listed in Table 1. A urine screen for BZDs was negative (<40 ng/mL).

After failure in treating insomnia with hypnotics, including BZDs and non-BZDs, Mr. A chose GABA tea (Green Heart Field Natural Tea Farm, Nantou, Taiwan). The composition of the GABA tea includes ascorbic acid (0.58%), total free amino acid (1.39%), total nitrogen (3.91%), reducing sugar (1.35%), crude fat (2.69%), total catechins (1.44%), glutamic acid (41.35 mg/100g), GABA (180.97 mg/100 g), alanine (51.86 mg/100 g), and theanine (613.80 mg/100 g).³ Although GABA tea did not affect AHI and oxygen desaturation, it did help sleep in terms of PSQI as well as sleep efficiency. The urine screen for BZDs was negative; however, the changes in sleep stage distribution resembled the changes that resulted from BZDs.

TABLE 1. COMPARISON OF THE PARAMETERS OF POLYSOMNOGRAPHY BEFORE AND 1 MONTH AFTER USING γ -AMINO BUTYRIC ACID TEA

Parameters	Before	After
Sleep efficiency	76.7%	89.0%
Sleep onset latency	9.1 min	2.4 min
REM onset latency	56.0 min	112.5 min
Sleep stages distribution		
REM	23.1%	11.5%
S1	19.9%	15.2%
S2	55.5%	73.3%
S3 + S4	1.5%	0%
Average oximetry distribution	94.1%	94.5%
Apnea hypopnea index	10.2	10.7

REM, rapid eye movement.

Specifically, the changes in sleep stages included increased sleep efficiency and stage 2, and suppressed stage 3/4 and rapid eye movement sleep.^{4,5} BZDs are not associated with a greater mean AHI, which was also true in the present case. Whether long-term use of GABA tea has similar risk of physical tolerance and dependence as occurs with BZDs deserves further study. Interestingly, but not surprisingly, GABA tea also relieved Mr. A's back pain. Since muscle relaxants, including BZDs, are commonly used for back pain, whether GABA tea also possesses properties of muscle relaxants, like BZDs, warrants further studies.

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The authors state that no competing financial interests exist.

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Complementary and Alternative Medicine Use in Turkish Children with Chronic Hepatitis B

Dear Editor:

Chronic illnesses are associated with an increased incidence of complementary and alternative medicine (CAM) use in childhood.¹ Patients with chronic hepatitis B virus (HBV) infection sometimes need long-term treatments. Despite prolonged use, virus may sometimes escape or protects itself from antiviral therapy, which results in treatment failure.² Parents may use CAM for HBV infection, especially when treatment fails. To date, there is no pediatric information about the use of CAM for chronic HBV infection. Therefore, we aimed to analyze (1) prevalence of CAM use and (2) factors that influence its use in pediatric patients with chronic HBV infection.

During a 6-month period, all children with chronic HBV infection in our pediatric hepatology department were invited to participate in this study. Patients and parents who agreed to give verbal informed consent were included in the study. The questionnaire including the information on the child's demographics, current or previous HBV medications, duration of disease, and disease status and current laboratory findings were filled out. We then asked detailed questions to ascertain whether the patient had used CAM therapy at any time. Types and details of CAM therapy used were recorded. Demographic and clinical findings and disease status were investigated as predictors that influence the use of CAM. Parental education level was scored as follows: 0, no education and 4, graduate schools. Economic status was graded as follows: 3, income greater than expenses and 1, income less than expenses.

Patients were divided in two groups: CAM and non-CAM. Groups were compared using *t*, Mann-Whitney *U*, and the χ^2 test where appropriate. $P < 0.05$ were considered statistical significant. All analyses were performed using SPSS version 10.0 of the package program (SPSS Inc., Chicago, IL).

During the study period, 112 children fulfilled the inclusion criteria. Parents of 89 children (79.4%) agreed to participate in the study. The characteristics of the patients are shown in Table 1. Approximately 70% of the patients received antiviral treatment.

Of the 89 children with chronic HBV infection, 17 (19.1%) had used some forms of CAM in the past. The 3 most common used CAM therapies were herbal medicine (42.8%), royal jelly (23.8%), and vinegar water (14.2%). Fourteen percent (14%) of the CAM users used quail eggs and 5.8% used black mulberry juice. The respondents learned about CAM through friends (29.4%), relatives (29.4%), and media (17.6%). The reason for using CAM was "nonresponse to treatment" in 52.9%, "the suggestion of trusted person" in 35.2%, and "the belief of complementary/alternative methods" in 1 respondent (5.8%). Only 2 respondents (11.7%) thought that it was effective, 58.8% thought it was partially effective, and others thought there was no improvement.

The characteristics and differences between groups are shown in Table 2. The differences between age ($p = 0.909$), gender ($p = 0.337$), geographic location ($p = 0.932$), and father's education level ($p = 0.89$) were not significant. However, long-term follow-up ($p = 0.003$), prescribing a treatment ($p = 0.02$, odds ratio [OR]: 9.6, 95% CI: 1.21–204.89), low education level of mother ($p = 0.009$), and low economic status ($p = 0.049$) were found to be associated with CAM use, whereas inactive carrier state was associated with decreased CAM use ($p = 0.016$, OR: 0, 95% CI: 0–0.69).

As in the CAM users group, herbal medicine (41.6%) was the most known CAM in the non-CAM users groups followed by quail eggs (33.3%), prayer healing (33.3%), speleotherapy (27.7%), and royal jelly (25%). Eighty-four percent of the patients in the non-CAM group thought that CAM had side-effects and would not consider using CAM in the future. On the other hand, 15.2% of the patients in the non-CAM group would consider using CAM in the future when medical treatments are ineffective.

Our study confirms that the use of CAM in children with chronic HBV infection is lower than that in children with other chronic diseases or in a healthy population.^{3,4} Approximately 20% of the children used such medicine, especially (1) those who are followed long-term, (2) those who are prescribed a conventional medical treatment, (3) those with low education level of the mother, and (4) those with low economic status.

Herbal medicines and praying are the most common types of CAM used among patients with chronic liver disease. Herbal medicines have hepatoprotective and anti-inflammatory effects. They decrease the serum levels of aminotransferases but do not affect the viral load.⁵ Contrary to these, the most common herbals in our patient group were the leaves of lavender and apple tree. Lavender has a long history of medicinal use. It is a common herb in Turkey.^{6,7} It has long been used as an analgesic, expectorant, and diuretic, and for neuralgia, insomnia, hypertension, and inflamed wounds.⁷

Nonherbal CAMs used by our patient group were royal jelly, vinegar water, quail eggs, and black mulberry juice. These

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