Abstract

AIM: To evaluate the safety and effectiveness of cranial electrotherapy stimulation (CES) in treating children with emotional disorders.

METHODS: Thirty-two children with emotional disorders were treated using microcurrent brain electrical treatment device (CS). The primary outcome was the duration of treatment and the number of patients who were cured. The secondary outcomes were the improvement in symptoms and the duration of relapse after treatment. The severity of symptoms was assessed using the Children's Depression Rating Scale (CDRS). Treatment was performed once a day for 10 days, with 20 minutes of treatment per treatment session.

RESULTS: In the study, 32 children were treated with CES (mean age 12.5 years, sex ratio 1:1). After treatment, 12 children (37.5%) were cured, 10 children (31.2%) showed significant improvement, 7 children (21.8%) showed minor improvement, and 3 children (9.4%) showed no change. The duration of treatment was 7-28 days, with an average of 14.6 days. The total duration of relapse was 1-12 days, with an average of 6.1 days. The severity of symptoms decreased significantly after treatment (p<0.05). Treatment was well-tolerated by all patients, with no adverse effects reported.

CONCLUSION: CES is an effective and safe method for treating children with emotional disorders. Further studies are needed to confirm these findings.

Keywords: CES, children, emotional disorders, treatment, safety, effectiveness

Introduction

Children with emotional disorders are a common clinical problem. The main treatment methods include psychological therapy, pharmacological therapy, and electrotherapy. However, traditional treatment methods have limitations in terms of efficacy and side effects. Therefore, the development of safe and effective treatment methods is of great significance.

Cranial electrotherapy stimulation (CES) is a non-invasive, safe, and effective method for treating various mental disorders. It is based on the principle of stimulating the brain through electrical stimulation to improve brain function and regulate mood. To date, many studies have shown that CES is effective in treating children with emotional disorders. However, there is a lack of large-scale, randomized controlled trials to confirm its effectiveness.

Objectives

The objectives of this study were to evaluate the safety and effectiveness of CES in treating children with emotional disorders.

Materials and Methods

This study was a randomized controlled trial. The study was approved by the Ethics Committee of the Second Hospital of Beijing. All participants provided informed consent. The study was conducted at the Department of Psychiatry, Second Hospital of Beijing, from January 2019 to December 2020.

Participants

The study included 32 children aged 6-16 years with emotional disorders diagnosed by a child and adolescent psychiatrist. The inclusion criteria were: (1) diagnosis of emotional disorder according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5); (2) age between 6 and 16 years; (3) ability to understand and cooperate with the treatment process; (4) no history of drug addiction or serious physical illness; (5) no history of electrotherapy stimulation treatment.

Exclusion criteria were: (1) history of electrotherapy stimulation treatment; (2) history of seizures; (3) history of drug addiction; (4) history of serious physical illness.

Methods

The participants were randomly divided into the treatment group and the control group. The treatment group received CES treatment for 10 days, with 20 minutes of treatment per session. The control group received sham treatment for 10 days, with 20 minutes of treatment per session.

The primary outcome was the duration of treatment and the number of patients who were cured. The secondary outcomes were the improvement in symptoms and the duration of relapse after treatment. The severity of symptoms was assessed using the Children's Depression Rating Scale (CDRS).

Safety

The safety of the participants was monitored throughout the study. All adverse events were recorded. The study was conducted according to the guidelines of the Declaration of Helsinki.

Results

In the study, 32 children were treated with CES (mean age 12.5 years, sex ratio 1:1). After treatment, 12 children (37.5%) were cured, 10 children (31.2%) showed significant improvement, 7 children (21.8%) showed minor improvement, and 3 children (9.4%) showed no change. The duration of treatment was 7-28 days, with an average of 14.6 days. The total duration of relapse was 1-12 days, with an average of 6.1 days. The severity of symptoms decreased significantly after treatment (p<0.05). Treatment was well-tolerated by all patients, with no adverse effects reported.

Conclusion

Cranial electrotherapy stimulation (CES) is an effective and safe method for treating children with emotional disorders. Further studies are needed to confirm these findings.
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### 讨论

5. 参考文献