



Acute and maintenance transcranial magnetic stimulation in a pregnant woman with major depression: a case report

E Özten*, GH Sayar, KO Karamustafaloğlu

Abstract

Introduction

In pregnant women with depression, there are a few case reports and studies showing the efficacy and reliability of transcranial magnetic stimulation. This report presents the acute and maintenance treatment results of transcranial magnetic stimulation in a pregnant woman who meets the diagnostic criteria for a major depressive episode.

Case report

A 24-year-old, 17-week pregnant housewife was admitted to ER with 10-week ongoing crying, distress, loss of appetite, weight loss, insomnia, sadness, loss of daily functioning, request of pregnancy termination and suicidal thoughts.

Conclusion

Transcranial magnetic stimulation is promising as an effective alternative in pregnant patients.

Introduction

The most common psychiatric illness during pregnancy is major depressive disorder¹. Pharmacological treatment of psychiatric disorders in pregnant women may cause undesirable side effects on the foetus, like teratogenicity, toxicity, foetal developmental abnormalities and discontinuation symptoms².

In pregnant women with depression, there are a few case reports and studies showing the efficacy and reliability of repetitive transcranial magnetic stimulation (rTMS)³⁻⁵. There is no study on maintenance rTMS in pregnant women.

This report presents the acute and maintenance treatment results of the rTMS in a pregnant woman who meets the diagnostic criteria for major depressive episode.

Case report

A 24-year-old, 17-week pregnant housewife was admitted to ER with 10-week ongoing crying, distress, loss of appetite, weight loss, insomnia, sadness, loss of daily functioning, request of pregnancy termination and suicidal thoughts. The patient has had similar complaints during her previous two pregnancies, four and two years ago, and both pregnancies had been terminated by her request.

In her mental status examination, her self-care was decreased; her effect was distressed and depressive. She lost 10 kgs during the 17-week pregnancy. She met the major depression diagnostic criteria of DSM-IV-TR. Biochemistry, complete blood count,

urine analysis, thyroid function tests, vitamin B12, folic acid levels complied with norms of pregnancy. Her EEG and cranial MRI were normal. Her physical and neurological examinations were normal.

Hamilton Depression Scale with 17 items, Beck Depression Scale, Beck Anxiety Scale and Brief Psychiatric Rating Scale rates that were applied during her admission and follow-up process are shown in Table 1. The patient was diagnosed with major depression and hospitalized due to her suicidal thoughts, and rTMS was planned. The patient and her family were informed about rTMS in detail, verbal and written consent was obtained.

rTMS sessions were applied on the left prefrontal area, with 25 Hz stimulation, in 30-second intervals and 2 seconds long. Each session consisted of 1000 pulses. In the acute phase of treatment, a total of 20 sessions were applied six days a week.

Cognitive behavioural psychotherapy, two times a week, was added to the treatment. During the treatment process it was observed that patient's anxiety, depression, nausea and weight loss complaints decreased. The patient was discharged and followed-up as an

Table 1 Pre and post rTMS rating scale scores of the patient

	HAM-D	HAM-A	BDS	BAS	BPRS
First admission	29	32	34	30	39
After acute TMS	7	12	10	11	14
Before second TMS treatment	26	29	27	28	35
After second TMS treatment	8	11	11	12	16
After forty-sixth TMS treatment	7	9	11	13	12

HAM-D, Hamilton Depression Rating Scale 17-item; HAM-A, Hamilton Anxiety Scale; BDS, Beck Depression Scale; BAS, Beck Anxiety Scale; BPRS, Brief Psychiatric Rating Scale; TMS, transcranial magnetic stimulation

*Corresponding author

Email: eylem.ozten@uskudar.edu.tr

Uskudar University

NPİSTANBUL Neuropsychiatry Hospital

Alemdag Caddesi Site Yolu No:29 Umraniye, Istanbul, Turkey

Psychiatry Department, Uskudar University, Istanbul, Turkey

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outpatient. On the twenty-eighth week of pregnancy, her nausea and depressive complaints increased. She fulfilled the criteria of DSM-IV major depression again. She was hospitalized again and a total of 10 sessions of rTMS with 25 Hz were applied. After rTMS application, the patient's scale scores decreased significantly as shown in Table 1.

The patient, who was followed-up closely as an outpatient, received weekly sessions of 25 Hz maintenance rTMS, a total of 46 sessions and cognitive behavioural psychotherapy weekly. On the thirty-eighth week of pregnancy, she gave birth vaginally. The baby was 3600 g, APGAR score in first and fifth minute was 10, the mother and the baby were healthy. The baby is seven weeks old now and its mental and motor development is normal.

Discussion

Because of the risks of pharmacological treatments during pregnancy, the search for new treatments has emerged. There are a limited number of publications on the use of rTMS in pregnant women with depression. In the case we presented, rTMS, both as

acute- and maintenance treatment, has been used effectively and safely. Tarhan et al.⁶ reported that high frequency (25 Hz) rTMS was well tolerated and found to be statistically and clinically effective in patients with treatment resistant depression. So for this case 25 Hz was chosen, as most high frequency rTMS studies administered are between 10 and 20 Hz.

Conclusion

Although a medication therapy was not applied, psychotherapy and TMS alone caused decreases in depression and anxiety scale scores. As there are a limited number of publications on the use of acute- and maintenance TMS in pregnant women with depression, new publications and protocols are needed on the application of maintenance TMS. However, TMS is promising as an effective alternative in pregnant patients.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of

the written consent is available for review by the Editor-in-Chief of this journal.

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