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SUCCESS WITH INTENSIVE iTBS: A TREATMENT RESISTANT DEPRESSION CASE REPORT

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INTRODUCTION

Repetitive transcranial magnetic stimulation (rTMS) is a neurostimulatory treatment is becoming increasingly preferred for treatment-resistant depression, as it does not require anesthesia and barely any side effects compared with electroconvulsive therapy (ECT) (Chung et al. 2015). Accelerated intermittent theta burst stimulation (iTBS), one novel approach employed in a treatment-resistant depression patient, significantly at risk for suicide is hereby reported.

CASE

A 48-year-old female outpatient, who had been followed up for treatment-resistant depression for the past 28 years, presenting with anhedonia, depressed mood, insomnia, exhaustion, and suicidal thoughts. Depressive symptoms had been irresponsive to escitalopram, fluoxetine, sertraline, paroxetine, venlafaxine, bupropion, and augmentation strategies including mood stabilizers such as lamotrigine, valproic acid, as well as quetiapine and olanzapine used in different combinations with adequate dose and duration. Additionally, two courses of regular high frequency rTMS were employed in different settings. With a current treatment of lithium 900 mg/day and venlafaxine 300 mg/day, only a partial response was achieved without remission. Her Hamilton Depression Rating Scale (HAM-D-17) score was 25/53 indicating a severe depression, and the episode scored 11/15 on the Maudsley Staging Method for treatment resistance (Fekadu et al. 2009).

Although referred for ECT, an accelerated intermittent theta-burst stimulation (iTBS) protocol was initiated, on the grounds of a difficult airway due to obesity and short neck. The left dorsolateral prefrontal cortex (L-DLPFC) region of the right-handed patient was anatomically localized using the updated heuristical method recently described by Mir-Moghtadaei and colleagues (Mir-Moghtadaei et al. 2022).

The iTBS protocol consisted of 5 daily sessions spaced at least 40 minutes apart with 1800 pulses per session (triplet 50 Hz bursts, repeated at 5 Hz for 2 s and 8 s inter train intervals) applied at 90% motor threshold. Therefore, a total stimulation of 9.000 pulses/day (5 days) for a total of 45.000 pulses throughout the entire treatment course was applied.

She did not have any complaints or adverse events except headache on the first day of the treatment, which was subsequently relieved with paracetamol. At the end of the course, the patient stated that suicidal thoughts had completely disappeared, and she wanted to return to her job, which she had suspended for a long time. The HAM-D scale score, which was performed on the day her treatment protocol was completed, was calculated to be 4 and it was observed that there was a decrease of around 80%. However, the HAM-D score increased to 14 a week later. One noteworthy aspect of the reponse was that she did not display any suicidal ideation after treatment. An augmentation treatment of lamotrigine 200 mg/day was gradually initiated. Subsequently, remission was attained in the first month of lamotrigine 200 mg/day augmentation treatment.

DISCUSSION

In this manuscript, a case with suicidal thoughts and treatment-resistant depression, whose depressive symptoms improved with the accelerated iTBS protocol rTMS is presented. Recently, there are many accelerated and intensified iTBS studies performed at very strong intensities given a very high number of pulses (Cole et al. 2022, Desmyter et al. 2016, Duprat et al 2016, Li et al. 2020). However, some of these studies have been criticized especially because of the extremely intensive parameters such as 10 sessions per day with a total of 90.000 pulses (Li & Su 2018). It has been stated that accelerated iTBS with 10 sessions per day increases the placebo effect by ensuring that patients are more exposed to the therapeutic environment (Li & Su 2018). It is also proposed that,

although theoretical, accelerated and intensified iTBS may display a higher risk of seizures versus other protocols (Li & Su 2018).

The quick amelioration of suicidal thoughts observed ın thıs case, compatible with previous reports, is of special importance. It has been suggested that the risk of suicide is reduced even in patients who do not have a depressive response, and that the reduction in suicide risk with iTBS may have occurred independently of the antidepressant effect (Desmyter et al. 2016).

It is reported that the iTBS protocol may be the most promising in the treatment-resistant depression in point of effect size, safety speed improvement, and decrease or disappearance of suicidal thoughts. Here, we realized that rapid improvement could be achieved without particularly significant side effects using an average pulse rate and intensity. However, based on the rapidly developing relapse in this case, we would like to emphasize the importance of developing the total number of sessions and maintenance protocols and establishing evidence in controlled studies. In addition, properly designed controlled studies are needed to distinguish the placebo effect in such intensive protocols.

The promising value of iTBS protocols are undoubted, however there is still no consensus on protocols. Therefore, this lack of agreement over protocol parameters such as number of sessions per day, overall intensity, and total number of pulses delivered, hampers the accumulation of comparable data for any guideline grade meta-analytical proof.

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