

POSTER PRESENTATION

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# Transcranial magnetic stimulation as a new approach in medication overuse headache: a pilot study

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## Background

Repetitive TMS (rTMS) is effective in migraine prophylaxis.

## Introduction

To study the efficacy of high-frequency rTMS in medication overuse headache (MOH).

## Methods

A prospective, double-blind, randomized, placebo-controlled trial on patients suffering from MOH consecutively presenting in a six-month period in the Headache Centre of Trieste was performed. Patients were randomized into the rTMS or the sham-TMS group. Treatment consisted of 10 consecutively TMS sessions delivered on left dorsolateral prefrontal cortex, each session being 10 trains of 2-s duration, separated by 30-s pause, 20 Hz frequency, 100% motor threshold intensity. Demographic and clinical information, MIDAS score, headache days (HD), hours of headache (HH), and symptomatic drugs (SD) in the 3 months before (t1), and in the first (t2) and second month (t3) after stimulation were analysed using SPSS 14.0.

## Results

We enrolled 8 patients (7 F, 1 M; mean age  $44 \pm 11$ ), four patients underwent rTMS and four sham-TMS. All patients were migraineurs without aura as initial primary headache. We found, in both rTMS and sham-TMS group, no significant difference between the 3 months before and the 2 months after stimulation (rTMS: HD=  $22 \pm 6$  t1 vs  $22 \pm 11$  t2 vs  $19 \pm 14$  t3, HH=  $223 \pm 205$  t1 vs  $219 \pm 198$  t2 vs  $205 \pm 196$  t3, SD=  $22 \pm 10$  t1 vs  $18 \pm 7$  t2 vs  $16 \pm 8$  t3;

sham-TMS: HD=  $22 \pm 5$  t1 vs  $12 \pm 6$  t2 vs  $13 \pm 8$  t3, HH=  $180 \pm 117$  t1 vs  $99 \pm 73$  t2 vs  $97 \pm 28$  t3, SD=  $22 \pm 10$  t1 vs  $16 \pm 3$  t2 vs  $17 \pm 4$  t3). MIDAS score significantly reduced in rTMS group at a three-month evaluation ( $111 \pm 29$  vs  $42 \pm 27$ ;  $p=0.03$ ).

## Conclusions

Our preliminary data suggest that high-frequency rTMS is not useful to treat MOH, however the small sample does not allow to draw safe conclusions.

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