

MEETING ABSTRACT

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# EHMTI-0358. Improved chronic migraine after DTMS

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## Background

The prevalence of chronic migraine (CM) in the general population is around 2%. CM occurs with impaired quality-of-life and frequent medication overuse. Deep transcranial magnetic stimulation (dTMS) of the dorso-lateral prefrontal cortex (DLPFC) transiently suppresses central pain perception through reduced functional connectivity between mid-brain and medial thalamus.

## Aim

To assess pain reduction in CM using high frequency rTMS over the left DLPFC.

## Method

Fourteen patients with ICHD-32 CM were randomised to 12 dTMS sessions, delivered on alternate days over bilateral DLPFC with left prevalence (N = 7; 6 women, 1 man; mean age 45 years) or to treatment as usual (TAU, with anti-migraine agents). All had severe headaches for  $\geq 15$  days/month in the last three months, and did not respond to  $\geq 3$  preventive medications and to drug overuse treatment. Outcome measures were attack frequency, headache index, and number of medications in the month before (baseline), during treatment, and one month later.

## Results

Patients treated with dTMS, compared to TAU and baseline, had reduced pain intensity, frequency of attacks, and analgesic overuse, during treatment and one month later.

## Conclusion

dTMS presumably improved DLPFC function, thus allowing better executive abilities. This may have enhanced salience-related brain activity, redirecting or diverting attention through the hippocampus, the cingulate cortex, or other pain matrix structures. Results are compatible

with improved brain control over pain sensations. High-frequency dTMS over bilateral DLPFC improved CM, supporting a role for DLPFC in pain control.

No conflict of interest.

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