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### Migraine – preventive therapy

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#### SINGLE-PULSE TRANSCRANIAL MAGNETIC STIMULATION (sTMS) FOR THE TREATMENT OF MIGRAINE: A PROSPECTIVE REAL WORLD EXPERIENCE

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**Introduction:** Single pulse transcranial magnetic stimulation (sTMS) is a non-invasive neuromodulation technique which has been approved in 2014 by the National Institute for Health and Care Excellence (NICE) for the acute and preventive treatment of migraine. However, its effectiveness in a real world NHS service has not been explored yet. The Headache Centre, Guy's and St Thomas' NHS Trust is currently the only NHS service commissioned to offer sTMS to migraine patients. Here we present our interim results.

**Objectives:** This is an open-label prospective clinical audit. It aims to evaluate the effectiveness of sTMS (eNeura) as a non-pharmacological modality for the treatment of migraine with and without aura in a real world setting.

**Methods:** The audit is ongoing. We present here the outcome of the first 44 consecutive treated patients with chronic or high frequency episodic migraine. Audit inclusion criteria were a documented diagnosis of chronic migraine documented in a headache diary and patients willingness in filling a headache diary and HIT-6 score, which were used to collect clinical outcomes. Change in headache days, migraine days and HIT-6 at 3 months of treatment compared to baseline were analysed. Adverse events and treatment compliance were also collected.

**Results:** Forty-two migraine patients (11 with aura, 31 without aura) treated with sTMS were analysed. Twenty patients (47.6%) received sTMS after failing Botox<sup>o</sup> therapy, hence were considered refractory to medical treatments. At baseline, patients displayed an average of 14.7 headache days (HD)/month, 11.1 migraine days (MD)/month and HIT-6 score of 63.3. Following 3-month trial, 28 patients (64%) obtained a clinically meaningful benefit (-2.7 MD/month and -5.4 points on HIT-6 score) hence continued the treatment. Seventeen patients (36%) did not benefit from the therapy and discontinued the treatment. Of those, the majority were Botox non-responders.

At 6 months, 1 out of 28 responders stopped the treatment due to lack of effect durability. Amongst responders, five patients continued sTMS treatment for 12 months, 10 for nine months and 12 for six months. Treatment compliance was satisfactory with sTMS used up to eight pulses three times a day. Side effects were minor and include, worsening of the headache (n = 3), transient mild dizziness during the treatment (n = 1) and scalp tenderness (n = 2).

**Conclusion:** sTMS may constitute an effective and well tolerated preventive treatment option for difficult-to-treat high frequency/chronic migraine patients in a real world setting. Since sTMS is less costly than Botox<sup>o</sup> on the NHS, it could be included as one of the three preventive treatment to offer to chronic migraine patients prior to Botox.

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