Repetitive peripheral nerve blocks as an alternative preventative therapy for chronic migraine

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Introduction

- Greater occipital nerve blocks are effective in the management of primary headache disorders, including migraine.
- There is little evidence on the use of repetitive peripheral nerve blocks (PNBs) in chronic migraine.
- We conducted a prospective cohort study with the aim of identifying the effectiveness and safety of repetitive occipital, or a combination of occipital and trigeminal nerve blocks in a small cohort of patients with chronic migraine.

Methods

- Data was collected for 64 patients with chronic migraine who had PNBs between June 2017 to March 2019.
- The nerve blocks targeted the scalp nerves as shown in **Figure 1.**
- Patients continued on their migraine preventatives and acute medications throughout the treatment with PNBs
- Patients were followed up for up to 18 months

Outcome measures included:

- The reduction of headache days at 4 weeks post block
- The reduction of HIT6 scores at 3 months
- Patient-reported duration of improvement via telephone survey
- Complication rates

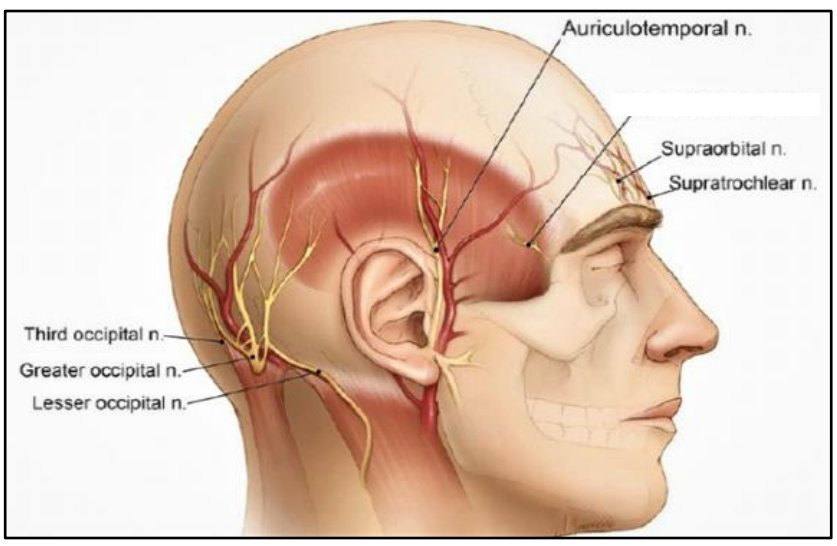

Figure 1. Schematic of the nerves targeted for the nerve blocks[1]

Nerve	Block constituents
• Greater Occipital	• Methylprednisolone 40mg • Lidocaine 2% • Bupivacaine 0.5% • Volume injected - 4ml
• Lesser Occipital • Auriculotemporal • Supraorbital • Supratrochlear	• Lidocaine 2% • Bupivacaine 0.5% • Volume injected – 2ml

Table 1. Constituents for different nerve blocks

Results

Demographics	
Mean age /years (S.D)	41 (12.4)
Male: Female ratio	10:54
Mean number of migraine preventatives	2
Mean Baseline HIT6 (S.D)	67 (6.0)
Mean baseline headache days (S.D)	17 (3.3)

Table 2. Baseline demographic information, S.D Standard Deviation

Outcomes	
Mean HIT 6 post block (S.D)	60 (8.9)
Mean headache days post block (S.D)	9 (4.1)
Mean reduction in headache days of responders (S.D)	8 (4.1)
Mean duration of effect of the block /weeks (S.D)	9 (4.3)
Number of responders with >30% reduction in headache days	42 (66%)
Number of responders who transformed from CM to EM	13 (31%)
Number of non-responders with <30% reduction in headache days	22 (34%)

Table 3. Outcome measures

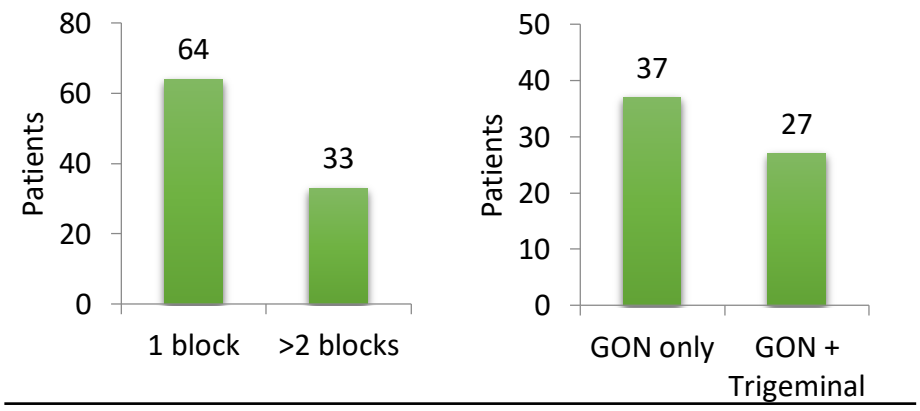

Figure 2. Number and type of nerve blocks given. GON, Greater occipital nerve

- There were 114 patient encounters in total
- There were a total of 501 separate injections provided
- There were minor complications on 3 occasions (injection site pain and dizziness)
- 27 (42%) patients had a sub-optimal response to PNBs and were referred for Onabotulinum Toxin A, with 57% subsequently responding to this treatment

Conclusions

- Repetitive PNBs are safe and could be an effective alternative strategy in providing short-term headache prevention
- 1/3 of our responders transformed into episodic migraine
- This real world data requires further investigation with well-designed randomised controlled trials

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1. Kemp WJ III, Tubbs RS, Cohen-Gadol AA. The innervation of the scalp: a comprehensive review including anatomy, pathology, and neurosurgical correlates. Surg Neurol Int. 2011;2:178 [52]