SHORT REPORT

Paroxysmal hemicrania responding to topiramate

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Chronic paroxysmal hemicrania (CPH) is a rare primary headache syndrome, which is classified along with cluster headache and short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) as a trigeminal autonomic cephalalgia. CPH is exquisitely responsive to indomethacin so much so that the response is one of the current diagnostic criteria. The case of a patient with CPH, who had marked epigastric symptoms with indomethacin treatment and responded well to topiramate 150 mg daily, is reported. Cessation of topiramate caused return of episodes, and the response has persisted for 2 years. Topiramate may be a treatment option in CPH.

Chronic paroxysmal hemicrania (CPH) is a rare primary headache syndrome, which is classified along with cluster headache and short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) as a trigeminal autonomic cephalalgia.[1] The International Headache Society classification criteria[2] require relatively short-lasting (2–30 min) episodes of severe unilateral orbital, supraorbital or temporal pain accompanied by cranial autonomic symptoms. The episodes are prevented completely by therapeutic doses of indomethacin.[3] The main troublesome side effect of indomethacin is gastric irritation in about 25% of patients,[4] which has necessitated the withdrawal of indomethacin in CPH, and the use of alternatives, such as cyclooxygenase 2 (COX-2) inhibitors, rofecoxib, valdecoxib and celecoxib,[5–7] and calcium channel blockers.[8]

We report the case of a patient with CPH with a good response to indomethacin, whch had to be withdrawn because of gastric side effects, who had a subsequent good and prolonged response to topiramate.

CASE REPORT

A 42-year-old man sustained an injury to the left side of the face in 2001; the next day, he started experiencing episodes of severe pain in the left temple, lasting 2–30 min (average duration 15 min). They were accompanied by ipsilateral conjunctival injection, lacrimation, nasal blockage and eyelid oedema. There was no nausea, vomiting, photophobia, phonophobia or osmophobia. He would experience 15–20 episodes/day, which sometimes clustered during the day, but could wake him from sleep. Movement would not make the pain worse, although he tended to keep still during an episode. There were no aura symptoms.

He had never had similar headache problems. He had some milder headaches in the past, which were throbbing, beginning in the neck and radiating to the frontal region, with pain being aggravated by movement and lasting for some hours. He experienced no other symptoms.

His family history showed that his father, who was now deceased, had migraines. No other medical problems were observed. He did not smoke and drank no alcohol. Cranial nerve examination was normal, as was the rest of the neurological examination. Magnetic resonance imaging of the brain was normal.

He received indomethacin 50 mg three times daily, which reduced the length of his episodes to 30–120 s, the frequency to 8–10 times a day and the severity from 8/10 to 5/10 on an oral rating scale. High flow oxygen (12 l/min) took the edge off the pain. Intranasal lidocaine and subcutaneous sumatriptan 6 mg were not beneficial. A single dose of intramuscular indomethacin 100 mg abolished his episodes for several hours.[3] His clinical picture and response to indomethacin is consistent with a diagnosis of CPH based on the International Classification of Headache Disorders.[2]

He was discharged from hospital on indomethacin 50 mg twice daily and ranitidine. After 6 weeks, he developed epigastric pains, and was switched to a proton pump inhibitor. He was prescribed celecoxib instead of the indomethacin, at doses up to 400 mg daily, with inconsistent, sometimes useful, effects on his headaches.

He was then prescribed topiramate at an increasing dose starting at 25 mg daily. At doses from 200 to 350 mg daily he had almost complete abolition of his episodes, but noticed side effects of cognitive slowing, dry mouth and weight loss. At a lower dose of 100 mg daily there was a moderate effect, with 3–4 episodes/day of 5–10 min duration. Thereafter, an intermediate dose of 150 mg daily was achieved, with only 1–2 episodes/day. At 2 years follow-up, he still has good control of his episodes. When he reduces the dose, the episodes return.

DISCUSSION

This patient has post-traumatic CPH, which has been described previously.[9] Indomethacin effected a good response, but had to be stopped because of the gastric side effects. In his case, COX-2 inhibitors had no effect, although they have been reported to be effective in other cases of CPH[5–7] and hemicrania continua.[10] However, the recent findings that chronic high-dose COX-2 inhibitors are associated with an increased risk of ischaemic heart disease and heart failure,[11] and the lack of response of some patients to COX-2 inhibitors, necessitate that a suitable alternative preventive measure be identified. It is our experience that verapamil is not often helpful in patients with paroxysmal hemicrania in contrast with cluster headache.

Topiramate is a neuromodulator that is effective in the prevention of migraine, as shown in placebo-controlled trials,[12–14] and in open-label trials in cluster headache[15–18] and SUNCT,[19–22] although a robust response has not been seen in all open-label trials.[23–25] There is a case report of the effectiveness of topiramate in paroxysmal hemicrania–tic syndrome.[26]

Topiramate is also used in the treatment of other painful conditions, including painful diabetic neuropathy.[27] It has been reported to be as useful in intercostal neuralgia,[28] and in a case series of trigeminal neuralgia,[29] but not in a placebo–controlled study.[30] Topiramate has multiple mechanisms of action.[31] They include modulating voltage-gated sodium ion channels,

Abbreviations: COX, cyclooxygenase; CPH, chronic paroxysmal hemicrania; SUNCT, short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing

blocking excitatory glutamate receptors, modulating voltage-gated calcium ion channels, inhibiting carbonic anyhdrase and enhancement of inhibitory γ-aminobutyric acid-mediated chloride influx through γ-aminobutyric acid A receptors.[32] Inhibition of trigeminovascular nociceptive traffic is seen with topiramate in experimental animals,[33] and this action seems to occur outside the trigeminocervical complex.[34] The known side effects of topiramate include somnolence, paraesthesia, diminished appetite, nausea, diarrhoea, weight loss, abdominal pain and dysgeusia.[35] Central nervous system adverse events included somnolence, insomnia, memory difficulty, language problems, concentration difficulty, mood problems and anxiety.[35] Additionally, renal calculi and paraesthesia occur rarely,[31] attributed to weak carbonic anhydrase inhibition by topiramate. It is suggested that starting at low doses, once or twice daily, and making small increments thereafter can minimise side effects; such was the case in a group of patients with cluster headache.[15] It is noted in our patient that the side effects were present only at higher doses (>200 mg/day), and he came to a suitable compromise on an intermediate dose at which there were no adverse effects, but his CPH episodes were adequately suppressed. Accepting the limitations of no placebo treatment, the recrudescence of the episodes with cessation of treatment, the prolonged effect and natural history of CPH each argue for a real therapeutic effect in this case.

Given the success of topiramate in other primary headache and pain syndromes, this report of a beneficial effect of topiramate in paroxysmal hemicrania in our patient highlights its usefulness in trigeminal autonomic cephalalgias, especially in cases where indomethacin and other preventive treatments are not viable.

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