This is the case of a 38 years old woman referred to our clinic because her electrocardiogram (ECG) with V1–2 at 2nd, 3rd, and 4th right and left parasternal intercostal space showed a classical type 1 Brugada pattern (Figure 1A). She had no risk factors, no family history of sudden cardiac death, no syncope, no chest pain, no dyspnoea, and no history of palpitations. Blood tests, chest X-rays, and echocardiography were normal. She was on daily topiramate 50 mg b.i.d. because of migraine for the past 3 years. After 5 days of topiramate wash-out (half-life is 21 h), her ECG showed disappearance of Brugada type 1 ECG. Nevertheless, J point elevation was still present even after topiramate discontinuation (Figure 1B). The patient underwent an ajmaline test that showed induction of the type 1 Brugada pattern after only 10 mg of drug administration.

Topiramate is a broad-spectrum antiepileptic drug that is approved for preventing or reducing the frequency of epileptic seizures, and for the prophylaxis of migraine. It possesses the ability to block several types of voltage-gated Na\(^+\) and Ca\(^{2+}\) channels.\(^1\,^2\)

It’s well known that Brugada syndrome could be due to a sodium (mainly) or calcium channel impaired function leading to outward/inward current imbalance which in turns could lead to phase two re-entry and ventricular fibrillation.\(^3\)

The inhibitory effect of topiramate on sodium and calcium channel could explain its Brugada type 1 ECG inducing activity in this particular patient. Notably that the effect of ajmaline in provoking the type I changes is similar to that of the effect of topiramate in this patient. Since she had no symptoms and no family history of sudden cardiac death she was discharged with all the recommendation are needed in Brugada syndrome patients and the list of the drugs to be avoided including topiramate.

**Consent:** The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

**Conflict of interest:** none declared.

**References**

Figure 1 Electrocardiogram. (A) Under topiramate 50 mg and (B) after topiramate washout.