Topiramate induced weight loss: is its development associated with success in migraine preventive medication ?

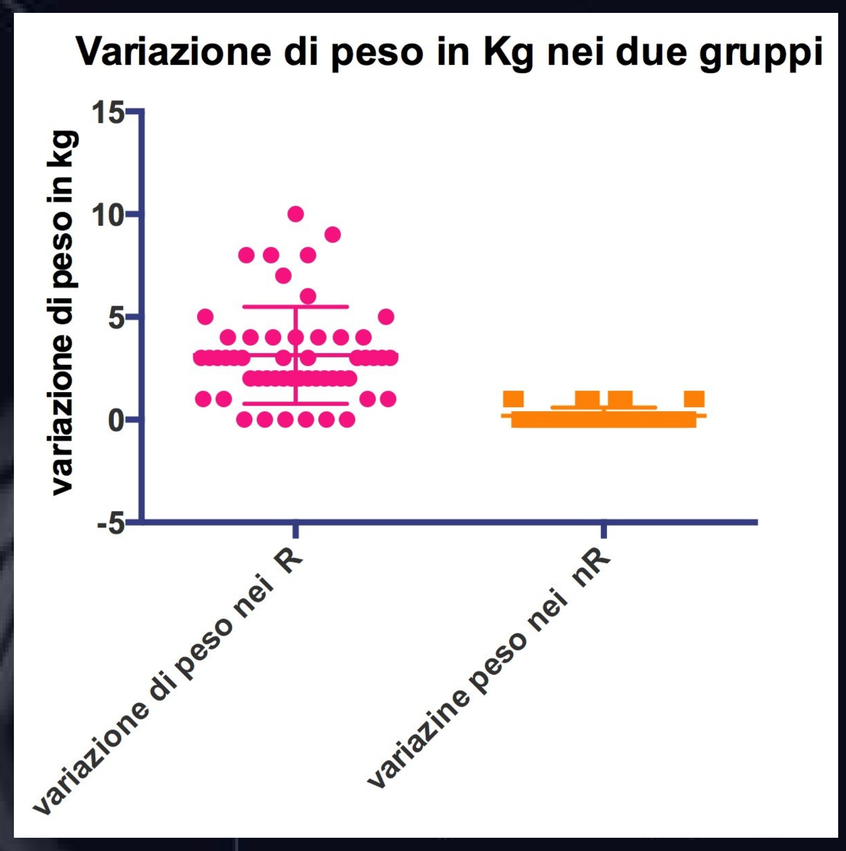
E.Dini[1], F. Baldacci[1] ,M. Cafalli[1], C.De Luca[1], L. Giampietri1, A. Vergallo[1],U. Bonuccelli[1], S. Gori[1]*

[1]Neurology Unit, Department of Clinical and Experimental Medicine, University of Pisa

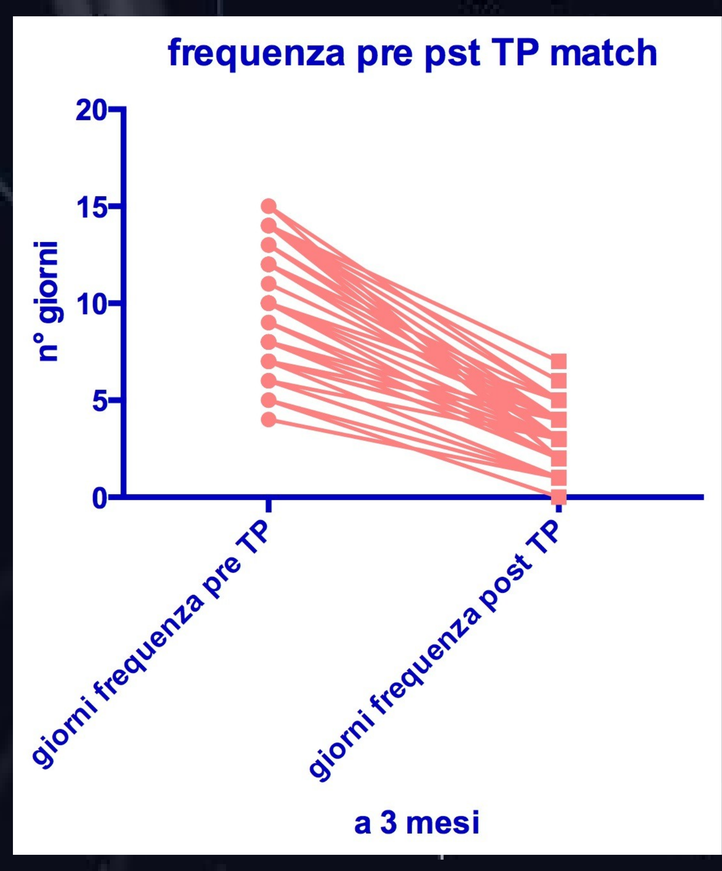
Objectives. The aim of the study was to quantify how many patients, diagnosed with episodic migraine without aura (MwoA), had a reduction in body weight during medication with Topiramate (TPR), widely considered a first-line therapy in adult episodic migraine (level A evidence-based)[1]; the second endpoint was to determine if this potential side effect occurrence differs according to therapeutic efficacy.

Methods. We performed a case-control study in outpatient headache clinic patients, during the period February 2015 – March 2016. All enrolled patients (n=52) fulfilled criteria for MwoA and received TPR tailored until daily dose 100 mg for at least 3 months. They were all prophylactic drug naïve; they were identified as responders (R) in the presence of a reduction of migraine attacks greater than 50%, during the treatment period, otherwise they were considered non responders (nR).

Results. We performed statistical analysis (Student's t- Test) and it resulted in a significant change at 12 weeks in body weight in the R group (n=42) (3,135 kg ± 2,35; p< 0.0001), compared with the nR group (n=42) (0.1923 ± 0.39 kg). Statistical analysis of frequency in migraine days/month demonstrated significant change in the R group with p< 0,0001 (9.88 ± 2.85 at baseline vs 3.21 ± 1.33 at 12 week). Demographic and baseline clinical characteristics were similar between the two groups.



Discussion and conclusion. Literature showed that patients who received TPR, for varied indications, experience significant weight loss [2]. TRP stimulates lipoprotein lipase in adipose tissue and muscle, contributing to thermogenesis and oxidation of energy substrates; it also acts on increasing production of adiponectin. In the CNS it modulates concentration of CRH and NPY, which has important effects on appetite. TPR has an inhibitory effects on voltage-gated Na^+ and Ca^+ channels, a modulating effect on glutamate-mediated neurotransmission (antagonistic properties at the AMPA/kainate subtype of glutamate receptors, that has an important role in stimulating the appetite), and modulatory action on GABA-A receptors[3]. It has inhibitory effects on carbonic anhydrase (greater efficacy of TPR in prophylaxis of those patients who experience dysesthesia).
The higher incidence of WL in R group, led us to suppose that the central and/or peripheral mechanisms through which TPM produces weight loss are also involved in determining treatment success in migraine prevention. TPR could be the preferred choice in patients with high BMI, the latter being a transformation risk factor from an episodic to a chronic pattern of migraine headache.



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