WAS IT NECESSARY TO CHANGE THERAPEUTIC RANGE OF TOPIRAMATE?

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Abstract

Aim: The Norwegian Association for Clinical Pharmacology in their National Guidelines decreased therapeutic range (TR) of topiramate (TPM) from 5-20 mg/L to 2-10 mg/L. The objective of this study is to ascertain which TR produces better clinical outcomes. Methods: Data source were request forms for routine therapeutic drug monitoring of TPM. Concentration dependent adverse drug reactions (ADRs) were evaluated in 1,721 samples taken pre-dose. Seizure frequency analysis was performed in 294 samples of monotherapy. Statistics: Prism 5.0, GraphPad Instatt: Mann–Whitney U test for median plasma level (PL). χ2-test for seizure frequency and for distribution of PL according to TR 5-20 mg/L and intervals <2, 2-5, 5-10, 10-20, >20 mg/L. Results: Better seizure control was found in children both in whole cohort (without seizure 49% vs 37% adults), as well as in monotherapy (56% vs 44%), in children with PL 5-20 mg/L vs 5 mg/L (65% vs 44%) and in children with PL 5-10 mg/L vs <2 mg/L. Seizure-free children had higher PL than those with seizure yearly: median (lower, upper quartile) [mg/L]: 5.5 (3.4-6.5) vs 4.7 (4.3-7.95). No difference was found in adults. Seizure control was poorer in all patients with PL <2 mg/L compared to 5-10 mg/L; and 10-20 mg/L; further in PL within 5-10 mg/L vs 10-20 mg/L; and in the period 2003-2005. ADRs reported in 38 samples (2.8%) were without relation to PL. Conclusions: Change of TR is not recommended.

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