THERAPEUTIC DRUG MONITORING OF LEVETIRACETAM IN CONCOMITANT TREATMENTS

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Levetiracetam (LEV) is one of the newer and most commonly used antiepileptic drugs. With its unique mode of action, LEV has proven effective in treating multiple seizure types, in both adults and children older than one month. It has been considered as an antiepileptic drug with an ideal pharmacokinetic profile, thanks to its rapid and complete intestinal absorption, negligible plasma protein binding, and non-hepatic metabolism. Due to its favorable profile, high degree of efficacy and low risk of interaction, it qualifies as a suitable candidate for concomitant antiepileptic treatments. Routine therapeutic monitoring of LEV concentrations is not common in clinical practice (1). However, despite the good tolerability and easy of dosing, recent research has focused on factors that may alter LEV pharmacokinetics. When considering concomitant antiepileptic therapy in which LEV is administered, growing number of studies highlights that altered pharmacokinetics of LEV can be expected in patients on polytherapy. Accordingly, special attention is paid to therapeutic monitoring of LEV during concomitant use with other antiepileptic drugs that induce or inhibit enzymes due to their potential effect on the pharmacokinetics of LEV (2). Since the pharmacokinetic profile of LEV may be influenced by many factors, the monitoring of concentration represent an important step in the individualization of the therapeutic approach necessary to control seizures without side effects. Accordingly, therapeutic monitoring of LEV may be useful in improving the outcome of concomitant antiepileptic therapy, as well as in patients with altered physiological conditions (pediatric and elderly patients, pregnant women with epilepsy).

References

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TERAPIJSKI MONITORING LEVETIRACETAMA KOD KOMBINOVANIH TERAPIJA

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Levetiracetam (LEV) je jedan od novijih i najčešće korišćenih antiepileptičnih lekova. Sa jedinstvenim načinom delovanja, LEV se pokazao efikasnim u lečenju različitih tipova napada, kako kod odraslih, tako i kod dece starije od mesec dana. Smatra se antiepileptičnim lekom sa idealnim farmakokinetičkim profilom, zahvaljujući brzoj i potpunoj crevnoj resorpciji, zanemarljivom vezivanju za proteine plazme i nehepatičkom metabolizmu. Zbog svog povoljnog profila, visokog stepena efikasnosti i niskog rizika od interakcija kvalifikuje se kao pogodan kandidat za kombinovanu antiepileptičnu terapiju. Rutinski terapijski monitoring koncentracija LEV nije uobičajen u kliničkoj praksi (1). Međutim, uprkos dobroj podnošljivosti i jednostavnom doziranju, nedavna istraživanja usmeravaju pažnju na faktore koji mogu da izmene farmakokinetiku LEV. Kada se razmatra kombinovana antiepileptična terapija u okviru koje se primenjuje LEV, sve veći broj studija naglašava da se može očekivati izmenjena farmakokinetika LEV kod pacijenata na politerapiji. U skladu sa tim, posebna pažnja je posvećena terapijskom monitoringu LEV tokom istovremene primene sa drugim antiepileptičnim lekovima koji indukuju ili inhibiraju enzime zbog njihovog potencijalnog uticaja na farmakokinetiku LEV (2). Budući da veliki broj faktora može uticati na farmakokinetički profil LEV, monitoring koncentracija predstavlja važan korak u individualizaciji terapijskog pristupa neophodnog za kontrolu napada bez neželjenih efekata. U skladu sa tim, terapijski monitoring LEV može biti koristan u poboljšanju ishoda kombinovane antiepileptičke terapije, kao i kod pacijenata sa izmenjenim fiziološkim stanjima (pedijatrijski i stariji pacijenti, trudnice sa epilepsijom).

Literatura

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