Zonisamide: A New Antiepileptic Drug

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Although the significant progress in pharmacotherapy of epilepsy during last decade was achieved, about one third of patients are resistant to the current treatment. When the monotherapy is not efficient, the polytherapy should be applied. Zonisamide (ZNS) is a new antiepileptic drug (AED) efficient in treating refractory epilepsy. Its efficacy in different types of seizures was confirmed in various animal studies as well as in clinical conditions. ZNS inhibits voltage-dependent Na⁺ channels and Ca²⁺ channels of T-type. The drug influences also monoamine neurotransmission and exhibits free radical scavenging properties. ZNS has a linear and favorable pharmacokinetics with excellent oral bioavailability. Furthermore, ZNS treatment, compared to other anticonvulsants, is relatively safe and well tolerated. Since ZNS is often used in polytherapy, its interactions with other AEDs seem to be of particular importance. However, the experimental data are rather inconsistent and further studies are necessary to elucidate exact effects of co-administration of ZNS with other AEDs. Recently, the clinical and experimental studies have suggested some new indications for ZNS administration, as mania, neuropathic pain, Parkinson’s disease or migraine prophylaxis. Nowadays, it is also well established that ZNS exerts neuroprotective properties.

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