

Correspondence

West syndrome, can topiramate be on top?

To the Editor

In agreement with previously published studies,¹⁻³ the study by Al-Baradie and Elseed⁴ greatly supports the notion that topiramate is generally well-tolerated and it represents an effective antiepileptic drug in the treatment of West syndrome. However, the long-term safety and possible adverse effects of topiramate have not yet been fully established in infants and young children. This might halt the wide spread application of that medication in the clinical setting. Apart from poor appetite and somnolence as noticeable side effects, there are growing concerns on other potential effects of this medication in growing children, particularly the development of metabolic acidosis,⁵ disturbed bone mineral density,⁶ hypocitraturia, hypercalciuria, and elevated urine pH, leading to an increased risk of kidney stone disease.⁷ Moreover, hypohidrosis, which has not been described previously, can be clinically significant during heat stress and exercise challenge.⁸ The latter 2 potential effects, namely, the increased risk of nephrolithiasis and heat intolerance, need to be seriously considered in children on topiramate residing in countries with a hot climate like Saudi Arabia.

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Reply from the Author

Thank you for the comments. Topiramate is one of the new antiepileptic drugs. This novel medication will aid the improvement of the quality of life of epileptic patients through improved seizure control and reduced adverse effects.⁹ It was studied in children of various ages, ranging between 12-61 months in some of the long-term studies; confirming that topiramate represents a useful drug, effective in a wide range of seizures and epilepsy syndromes. Moreover, preliminary data seem to suggest that the efficacy of topiramate is more sustained in localization-related epilepsy than in generalized epilepsy.¹⁰ Although it has many side effects like any other drugs, the most common ones are drowsiness, weight loss, metabolic acidosis, kidney stones, and glaucoma, and it is very important to follow up these children carefully during the treatment, especially in areas with hot weather such as Saudi Arabia. In a study,¹¹ 50 children

of age 0-12 years with seizures, namely, partial seizures with or without secondary generalization, myoclonic jerks, infantile spasms, generalized tonic-clonic seizures, absence or mixed seizures were chosen from the out-patient department. Topiramate was added in small doses to conventional antiepileptics, and increased until the most effective/best-tolerated dose was reached. The authors support the efficacy and safety of topiramate as an add-on drug in seizures in children.¹¹ Another prospective study¹² demonstrated that, on the basis of primary topiramate therapy, the combination treatment of both topiramate and low-dose adrenocorticotrophic hormone was effective and available for the patients with infantile spasms. Although the long term safety and possible adverse effects of topiramate have not been fully established in infants and young children, some studies have shown that it is a useful option for children with frequent seizures unresponsive to standard anti-epileptic drugs.¹³ In general, topiramate was well tolerated. It was concluded in some studies, that topiramate is effective for a broad range of seizures in infants and young children and represents a valid therapeutic option in this population.¹⁴ Other new antiepileptic drugs (lamotrigine, topiramate, felbamate, and zonisamide) have shown significant efficacy in the treatment of resistant West syndrome to previous medication. The current task is to determine the risk/benefit ratios of these 2 drugs (vigabatine, adrenocorticotrophic hormone) and to delineate the group of patients with West syndrome where their use would be optimal.¹⁵

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References

1. Zou LP, Ding CH, Fang F, Sin NC, Mix E. Prospective study of first-choice topiramate therapy in newly diagnosed infantile spasms. *Clin Neuropharmacol* 2006; 29: 343-349.
2. Korinthenberg R, Schreiner A. Topiramate in children with west syndrome: a retrospective multicenter evaluation of 100 patients. *J Child Neurol* 2007; 22: 302-306.
3. Mendonça de Siqueira LF. [Topiramate as an effective therapeutic option in the treatment of West syndrome]. *Rev Neurol* 2010; 51: 510-511. Spanish.
4. Al-Baradie RS, Elseed MA. West syndrome, can topiramate be on top? *Neurosciences (Riyadh)* 2011; 16: 53-56.
5. Belotti EA, Taddeo I, Ragazzi M, Pifferini R, Simonetti GD, Bianchetti MG, et al. Chronic impact of topiramate on acid-base balance and potassium in childhood. *Eur J Paediatr Neurol* 2010; 14: 445-448.

Correspondence

6. Zhang J, Wang KX, Wei Y, Xu MH, Su JM, Bao YG, et al. [Effect of topiramate and carbamazepine on bone metabolism in children with epilepsy]. *Zhongguo Dang Dai Er Ke Za Zhi* 2010; 12: 96-98. Chinese
7. Vega D, Maalouf NM, Sakhaee K. Increased propensity for calcium phosphate kidney stones with topiramate use. *Expert Opin Drug Saf* 2007; 6: 547-557. Review.
8. Arcas J, Ferrer T, Roche MC, Martínez-Bermejo A, López-Martín V. Hypohidrosis related to the administration of topiramate to children. *Epilepsia* 2001; 42: 1363-1365.
9. Akiyama T, Otsubo H. Antiepileptic drugs in North America. *Brain Nerve* 2010; 62: 519-526.
10. Grosso S, Franzoni E, Iannetti P, Incorpora G, Cardinali C, Toldo I, et al. Efficacy and safety of topiramate in refractory epilepsy of childhood: long-term follow-up study. *J Child Neurol* 2005; 20: 893-897.
11. Sreenivasan P, Kunju PA. Efficacy of Topiramate as an Add-on Drug in Seizures in Indian Children-An Observational Study. *Indian J Pediatr* 2011 Mar 5. [Epub ahead of print]
12. Zhu X, Chen O, Zhang D, Jin R, Li F, Wang Y, Sun R. A prospective study on the treatment of infantile spasms with first-line topiramate followed by low-dose ACTH. *Epilepsy Res* 2011; 93: 149-154.
13. Al Ajlouni S, Shorman A, Daoud AS. The efficacy and side effects of topiramate on refractory epilepsy in infants and young children: a multi-center clinical trial. *Seizure* 2005; 14: 459-463.
14. Grosso S, Galimberti D, Farnetani MA, Cioni M, Mostardini R, Vivarelli R, et al. Efficacy and safety of topiramate in infants according to epilepsy syndromes. *Seizure* 2005; 14: 183-189.
15. Djurić M, Marjanović B, Zamurović D. [West syndrome--new therapeutic approach]. *Srp Arh Celok Lek* 2001; 129 Suppl 1: 72-77. Serbian.

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