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### Gaze-evoked nystagmus associated with lamotrigine toxicity

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Lamotrigine (LTG) is a widely used antiepileptic drug (AED) for the treatment of partial and generalized seizures. LTG is metabolized predominantly in the liver through glucuronidation and when administrating with hepatic enzyme-inhibiting AED such as valproate (VPA), the serum level of LTG is increasing significantly. A 32-year-old woman with a 13-year history of epileptic seizures admitted to the hospital for exacerbating seizures. The seizures developed secondarily generalized and occurred several times a day. She had taken a single AED of LTG 450 mg a day. After intraveonously administration of VPA and then maintaining dose of VPA 600 mg and lamotrigine 450 mg a day, the seizure activity was resolved. However, she developed blurred vision, dizziness and nausea five days after medication of multiple AEDs. Neurologic examination was notable for prominent bilateral horizontal gaze-evoked nystagmus and perverted downward saccades during head impulses for horizontal canals. After suspicion of LTG toxicity, LTG was discontinued and replaced with levetiracetam. The dizziness and gaze evoked nystagmus markedly improved after discontinuation of the LTG and the seizure did not occur during six months of follow-up. Gaze-evoked nystagmus and perverted downward corrective saccades during horizontal head impulses indicate dysfunction of the vestibulocerebellum, especially flocculus and the floccular function of gaze holding and inhibition of the AC pathway could be disrupted by LTG toxicity. Even though LTG has been reported to be well tolerated, the risk of toxic effects could increase when VPA is combined.

### **Biography**

Jiyeon Kim is currently a clinical instructor in the Department of Neurology at Korea University Ansan Hospital. She was appointed in 2016 after completion of 2-year fellowship training in epilepsy in the Epilepsy Center at St. Mary Hospital, Seoul, Korea. Prior to her fellowship training, she completed 4-year neurology residency training at the Eulji Hospital, Seoul, Korea. Her research focuses on clinical and neurophysiological aspects of temporal lobe epilepsy and women with epilepsy.

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