



## Letter to the Editor

### Increased asymmetric dimethylarginine level after antiepileptic drug treatment may be independent of the changes in plasma homocysteine level

Dear Editor,

We have read the recent article by Sniezawska and colleagues with great interest.<sup>1</sup> The authors investigated the frequency of polymorphism in the *MTHFR* (C677T), *MTR* (A2756G), and *MTHFD1* (G1958A) genes and analysed the levels of homocysteine (Hcy), methionine, asymmetric dimethylarginine (ADMA), and arginine in epileptic patients treated with various antiepileptic drugs (AEDs). They found that AED pharmacotherapy in epileptic patients increases Hcy and ADMA levels. These authors suggested that their study showed an increase in Hcy level accompanied by an increase in ADMA level in epileptic patients receiving AEDs and concluded that hyperhomocysteinemia (HHcy) disrupts the feedback control of Hcy over ADMA.

In the discussion, the authors cite Jonasson et al.<sup>2</sup> and Wanby et al.<sup>3</sup> who showed that patients with vascular disease undergoing long-term AED therapy experience HHcy, but the concentration of ADMA does not always increase. Unfortunately these authors did not study Hcy and ADMA levels during the long-term AED therapy.

Elevated ADMA levels were first demonstrated in AED-treated epileptic patients in 2009.<sup>4</sup> In this study, the authors investigated the effect of valproic acid (VPA) and carbamazepine (CBZ) monotherapies on plasma levels of ADMA and Hcy and serum levels of folate and vitamin B12 in newly diagnosed epileptic patients. They found that ADMA levels significantly increased after the treatment in both VPA and CBZ groups. Homocysteine levels also increased in both the treatment groups, but the difference was significant only in the VPA group. The correlation between the changes in the ADMA and homocysteine levels was insignificant. Similarly, the difference between the mean ADMA change and mean homocysteine change was insignificant. Thus, these results showed that ADMA plasma levels were not associated with the harmonic changes in homocysteine.

Surprisingly, Sniezawska et al.<sup>1</sup> did not cite this article in their study. In our opinion, the lack of discussion of the results of this study may leave readers with an incomplete understanding of the issue. We must consider whether increased ADMA after AED treatment is independent of the changes in plasma Hcy.

#### References

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