Seizure 32 (2015) 45–46

Contents lists available at ScienceDirect

Seizure

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Letter to the Editor

Steroids efficacy in the acute management of seizure clusters in one case of PCDH19 female epilepsy

Dear Editor,

We read with great interest the paper entitled "Immediate suppression of seizure clusters by corticosteroids in PCDH19 female epilepsy" by Higurashi et al. [1].

Clusters of febrile and afebrile seizures, mainly focal motor or hypomotor with affective symptoms, are typical of PCDH19 female epilepsy (PCDH19-FE) [2]. After first reporting on the excellent efficacy of corticosteroids in acute cluster termination in one patient with PCDH19-FE in 2013 [3], in this paper the authors propose inflammatory processes causing functional breakdown of blood brain barrier as a possible patophysiological mechanism underlying epilepsy in PCDH19-FE [1]. This hypothesis would justify the efficacy of corticosteroids as an additional treatment option in the acute setting.

We recently admitted an 8-year-old patient with PCDH-19-FE harbouring a frameshift mutation pLeu807Profs*6 in heterozygous duplication c.2406_2419 dup, who presented with recurrence of an afebrile cluster of focal clonic and generalized tonic seizures. Interictal EEG showed diffuse unreactive delta background activity, maximal over the fronto-centro-temporal regions of both hemispheres (Fig. 1A). At the time of admission she was on valproic acid monotherapy.

Clinically, a predominantly lethargic status was only shortly interrupted by wakefulness periods in which she was apathetic and showed no verbal response.

As the clinical picture was in keeping with an acute epileptic encephalopathy, we administered 20 mg/kg/day intravenous methyl-prednisolone for 3 days, followed by oral deflazacort for 2 weeks, obtaining almost immediate seizure cessation (after the first infusion), while vigilance and social interaction recovered within 2 days. After 6 days of therapy, speech function reverted to the premorbid state. Restoration of posterior alpha activity on awake EEG was observed within 2 weeks (Fig. 1B).

We think that our observation further supports acute treatment with corticosteroids in patients with PCDH19-FE, and is in line with recent investigations providing evidence of a potential scientific rationale for their use. Dysregulation in the expression of aldo–keto reductase 1C1-3 (AKR1C1-3) genes (encoding for steroid hormone metabolizing enzymes) in skin fibroblasts and reduced blood levels of allopregnanolone (a GABA-R modulator showing anticonvulsant effects) have been demonstrated in patients with PCDH19-FE [4].

While research studies are warranted to reach better insight into the pathopysiological mechanisms underlying efficacy of steroids in PCDH19-FE, we think that clinical descriptions can significantly add to the current knowledge regarding the clinical relevance of this treatment approach.

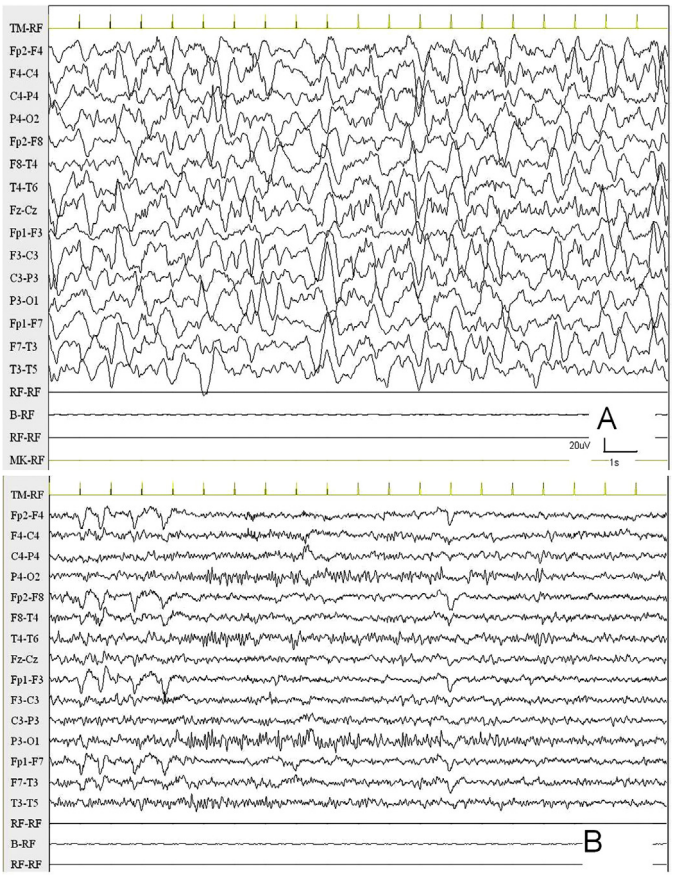

Fig. 1. EEG findings in our patient. EEG in the acute encephalopathic phase, before IV steroids administration: diffuse unreactive delta background activity, predominating over the fronto-centro-temporal regions (A). Follow-up awake EEG after 2 weeks: symmetrical posterior alpha activity without epileptiform discharges (B).

Conflict of interest statement

None of the authors has any conflict of interest to disclose.

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http://dx.doi.org/10.1016/j.seizure.2015.09.002
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Received 21 August 2015