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Polypharmacy with perampanel for drug-resistant, focal non-convulsive status epilepticus as a manifestation of a stroke-like episode in MELAS☆,☆☆

Letter to the Editor

With interest, we read the article by Santamarina et al. about three unrelated males with m.3243A≫G-associated MELAS syndrome, who all developed drug-resistant, focal, non-convulsive status epilepticus (NCSE) as a manifestation of a stroke-like episode (SLE) [1]. Following perampanel (PER) polytherapy, NCSE was successfully terminated [1]. We have the following comments and concerns.

SLEs may not only respond to antiseizure drug (ASD) treatment, but also to antioxidants, like coenzyme-Q, idebenone, or edaravone, to steroids, or to NO-precursors (L-arginine, L-citrullin) [2]. There are also indications that application of the ketogenic diet may be beneficial in single cases [3]. It would have been useful to point out in the article if the ketogenic or modified Adkin's diet had or had not been utilized and may that it may be effective in this situation. It is important to note that while SLE may occur with seizures and NCSE, a number of other clinical manifestations, such as hemiparesis, cortical blindness, hemi-anopia, confusion, depression, vomiting, headache, or psychosis, may occur [4]. All three patients received PER and other ASDs. It is therefore quite possible that PER may be ineffective in monotherapy as the authors point out.

Missing are serum levels of ASDs applied [5]. In addition, knowing the family history is crucial to assess if the variant occurred de novo or was inherited.

Though the case series is promising, the effectiveness of PER needs to be confirmed by studies on more patients. This goal appears reachable as more and more MELAS patients are identified worldwide and experience recurrent SLEs, which frequently manifest seizures and epilepsy.

A further limitation to interpreting the study is that the mutation load (heteroplasmy rates) in affected tissues or hair follicles, buccal mucosa cells, skin fibroblasts, muscle cells, blood lymphocytes, or urinary epithelial cells were not provided. Heteroplasmy rates may strongly influence the phenotype and are crucial for the interpretation of the clinical presentation [4].

Overall, this case series is impressive but would be more meaningful if missing data concerning antiseizure drug serum levels, family history, genetic background, and the amount of mutated mtDNA were provided.

Declaration of Competing Interest

There are no conflicts of interest.

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Josef Finsterer
Krankenanstalt Rudolfstiftung, Vienna, Austria
E-mail address: fifigs1@yahoo.de.

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