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【 LETTERS TO THE EDITOR 】

The m.3243A>G Genotype Can Be Associated with Rhabdomyolysis

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To the Editor We read with interest the report by Ito et al. concerning a 30-year-old man with mitochondrial encephalopathy, lactic acidosis, and stroke-like episode (MELAS) syndrome due to the variant m.3243A>G (lymphocyte heteroplasmy rate: 37%) who developed fatal acute renal failure due to rhabdomyolysis after cardio-pulmonary arrest (CPA) during recovery from a second stroke-like lesion (SLL) (1). We have several comments and concerns regarding this report.

The main issue of this study is why the index patient experienced CPA. Clarifying the etiology will require further investigation. The electrocardiogram (ECG) findings during and after cardio-pulmonary resuscitation (CPR) should be confirmed. Did the patient show asystole, ventricular fibrillation, ventricular tachycardia, or Torsade des pointes on arrival at the emergency department? Were there any abnormalities on the last ECG regularly recorded prior to CPR, particularly PQ or QT prolongation? Were myocardial infarction, pulmonary embolism, neurogenic pulmonary oedema, aortic dissection, ischemic stroke, and Takotsubo syndrome (TTS) excluded? Which were the results of echocardiography after CPR? Was there any indication of TTS, acute right ventricular strain, or intra-ventricular thrombus formation? It is crucial to exclude any electrolyte disturbance, particularly hypokalaemia, and we need a detailed list of any drugs the patient was taking at the time of CPR. It is also crucial to know if left ventricular hypertrabeculation/noncompaction (LVHT), a morphological abnormality of the left ventricular apex frequently associated with mitochondrial disorders (MIDs) (2), was excluded upon revision of the echocardiography or cardiac magnetic resonance imaging (MRI). LVHT can be complicated by cardio-embolism, heart failure, and ventricular arrhythmias, including sudden cardiac death (SCD) (3). Since CPA occurred during the night, whether or not any caregiver or neighbouring patient observed a seizure and if an electroencephalogram post-CPR revealed any electrical seizure activity should be clarified. We also need to know if post-CPR cerebral MRI revealed a new SLL.

We do not agree that acute renal failure was a primary manifestation of the MID. The patient developed severe rhabdomyolysis (creatine-kinase 153,293 U/L), which most likely caused acute renal failure. Rhabdomyolysis can be a primary manifestation of MELAS (4). We do not agree with the diagnosis of MELAS in the index patient's mother who also carried the m.3243A>G variant but had a heteroplasmy rate of only 5%. Patients with heteroplasmy rates of 5% usually remain asymptomatic. It should be clarified if the mother manifested clinically or subclinically.

Overall, this interesting case report may benefit from the provision of supplementary data and a more in-depth discussion and exclusion/confirmation of causes of CPA.

Informed consent was obtained.

The study was approved by the institutional review board.

The author states that he has no Conflict of Interest (COI).

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