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m.3243A>G Carriers do not Necessarily have to Manifest as MELAS

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LETTER TO THE EDITOR

We read with interest the article by Sari, *et al*., about a 40-year-old woman with mitochondrial encephalopathy, lactic acidosis and stroke-like syndrome (MELAS) due to the m.3243A>G variant in MT-TL1, which phenotypically manifested with hypertrophic cardiomyopathy, heart failure, hypertension, hypoacusis, headache, loss of consciousness, primary hyperaldosteronism, lactic acidosis, dizziness and chronic renal failure requiring hemodialysis since the age of 34 [Sari, N. Y. *et al*., 2024].

The first point is that MELAS manifests on the heart not only with left ventricular hypertrophy, systolic dysfunction or arterial hypertension, as stated in the index article, but also with a number of other abnormalities [Finsterer, J. *et al*., 2020]. These include dilated cardiomyopathy, left ventricular hypertrabeculation (non-compaction), myocardial fibrosis, sinus tachycardia, atrial fibrillation, non-sustained ventricular tachycardia, Wolf-Parkinson-White syndrome, left or right bundle branch block or sudden cardiac death [Finsterer, J. *et al*., 2020].

The second point is that no cardiac MRI was performed in the index patient [Sari, N. Y. *et al*., 2024]. To assess whether there was myocardial fibrosis, late gadolinium enhancement or non-compaction, it would have been helpful to perform a cardiac MRI with contrast.

Third, it is not clear why the lactic acidosis was treated by hemodialysis [Sari, N. Y. *et al*., 2024]. There is no evidence that dialysis has a long-term beneficial effect on serum lactate levels in patients with mitochondrial disorder (MID) and elevated serum lactate. What was the cause of the elevated serum lactate and after how long did the serum lactate rise again? Had the patient suffered a seizure before the deterioration that required admission to the ICU?

The fourth issue is that it was not stated whether the index patient also had an elevated CSF lactate and whether dialysis also led to a reduction in CSF lactate. Elevated serum lactate in MELAS is usually associated with CSF lactate, which can be measured by MR spectroscopy or direct examination of the CSF.

The fifth point is that the cause of the loss of consciousness is not clear [Sari, N. Y. *et al*., 2024]. Was the loss of consciousness due to a seizure, a stroke-like episode (SLE), carotid stenosis, supraventricular or ventricular arrhythmias, heart failure, cardioembolism or lactic acidosis?

The sixth point is that the patient does not appear to have had stroke-like episodes (SLEs) [Sari, N. Y. *et al*., 2024]. Since SLEs are pathognomonic for MELAS and for the diagnosis of MELAS according to the Hirano or Japanese criteria, the diagnosis of MELAS must be questioned. Not all m.3243A>G carriers also have phenotypic MELAS. Did the index patient have a history of SLE, epilepsy or syncope?

The seventh point: glomerulonephritis (GN) is not a common feature of MELAS [Sari, N. Y. *et al*., 2024]. What type of GN was diagnosed - focal or segmental GN? Has the diagnosis of GN been confirmed by renal biopsy?

The eighth point is that the patient was diagnosed with primary hyperaldosteronism, but the cause was not specified [Sari, N. Y. *et al*., 2024]. Was the primary hyperaldosteronism due to adrenal hyperplasia or adrenal adenoma, a manifestation of MELAS, or was it hereditary? Was the family history positive for hyperaldosteronism?

Overall, the diagnostic criteria should be met before diagnosing MELAS in m.3243A>G carriers. Cardiac involvement in m.3243A>G carriers is more diverse than assumed.

REFERENCES

1. Sari, N. Y., Sia, C. H., Wong, R. C. C., Lin, W. & Lim, Y. C. "Incidental finding of MELAS in a young woman with decompensated heart failure and end-stage

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kidney disease: a case report." *European Heart Journal Case Reports*, 9.1 (2024): ytae690.

2. Finsterer, J. & Zarrouk-Mahjoub, S. "The heart in m.3243A>G carriers." *Herz*, 45.4 (2020): 356-361.

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