Diagnosis of Kearns-Sayre Syndrome Requires Comprehensive Work-up
Josef Finsterer, Sinda Zarrouk-Mahjoub

To cite this version:
pasteur-01439282

HAL Id: pasteur-01439282
https://riip.hal.science/pasteur-01439282
Submitted on 29 Jun 2017

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Distributed under a Creative Commons Attribution - NonCommercial - NoDerivatives| 4.0 International License
To the Editor: With interest, we read the article by Yu et al. [1] about the clinical presentation and central nervous system (CNS) imaging in 19 patients with Kearns-Sayre syndrome (KSS), of whom 12 were genetically confirmed. We have the following comments and concerns.

The main disadvantage of the study was that the diagnosis was not genetically confirmed in all patients and mitochondrial DNA (mtDNA) deletion was detected in only 63% patients. [1] What was the reason for seven KSS patients not undergoing genetic testing? Did not all patients undergo muscle biopsy?

If only 12 of 19 patients underwent muscle biopsy, how can KSS be diagnosed? Among the seven patients who obviously did not undergo muscle biopsy, upon which clinical criteria were these patients diagnosed as KSS?

Among the seven patients who were not genetically confirmed, did the authors look for mtDNA point mutations in lymphocytes? It has been repeatedly reported that KSS may not only be due to mtDNA deletions but also due to mtDNA point mutations, such as m.3249G>A in the tRNA (Leu) gene, m.3255G>A in the tRNA (Leu) gene, or m.3243A>G in the tRNA (Leu) gene.

We should also be informed about the results of biochemical investigations to know about the activity of respiratory chain complexes. Complex I, complex II, complex IV, complex I and IV, complex I, III, and IV, complex I, IV, and V, and complex I, III, IV, and V deficiency or normal respiratory chain activity has been previously described in KSS. [2,3]

Among the 15 patients who underwent cerebral magnetic resonance imaging, six patients showed hyperintensities on diffusion-weighted imaging in the white matter or basal ganglia. [1] We should be informed about the nature and pathogenesis of these lesions. Were these lesions on the corresponding apparent diffusion coefficient map hyper-, hypo-, or iso-intense? Were these lesions interpreted as cytotoxic edema or as vasogenic edema? Can these lesions be interpreted as stroke-like lesions, the morphological correlate of a stroke-like episode?

Cognitive functions can be impaired in KSS patients. [4] Did the 19 patients also undergo neuropsychological testing to assess their cognitive abilities and if they were impaired or not?

Did the authors consider implantation of an implantable cardioverter defibrillator in any of their patients since four patients died from sudden cardiac death in a series of 35 KSS patients? [4] Did the patients undergo long-term electrocardiogram recordings, and in particular were loop recorders implanted to see if any of the patients had a tendency to develop prolonged QT-interval, early repolarization, or ventricular arrhythmias?

It was interesting to see that only 3 of 19 had short stature. [1] Short stature is one of the clinical criteria for diagnosing KSS. [5] Overall, these interesting case series should be supplemented by more detailed clinical, instrumental, and genetic data. The more information about KSS patients is collected, the more we can learn about the phenotypic and genotypic variability of these patients, and the better will be the management and outcome of KSS patients.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

REFERENCES
There were several articles studying the exact nature of high chain complexes in muscle tissues, can also help provide evidence for the diagnosis of mitochondrial disease. Biochemical investigations, especially activity assay of respiratory enzymes. We performed common mtDNA point mutations analysis (mtDNA A3243G, A8344G) in their blood, which were negative.

Unfortunately, such patients showed ragged-red fibers (RRF), ragged-blue fibers (RBF), or cytochrome c-oxidase (COX)-negative fibers in almost all patients. Muscle pathology features, muscle pathology and molecular genetic analysis can play a great role in the diagnostic workup. Muscle pathology shows an increase of fibrosis, inflammatory cell infiltration and mitochondrial accumulation in muscle biopsy, but all of them showed typical KSS features. We had muscle biopsy in another hospital, and we got a little muscle tissue of the other four (patients 8, 10, 17, and 18) because muscle tissue of the other four (patients 8, 10, 17, and 18) were not enough for further gene analyses; one patient (patient 12) had muscle biopsy in another hospital, and we got a little muscle tissue which also showed a moderate decline of cognitive function. In our KSS patients, which was associated with the presence of disability.

The results of Moraes et al. showed cognitive decline in 31% of the patients. Cognitive function was only evaluated in one patient, which also showed an increase of fibrosis, inflammatory cell infiltration and mitochondrial accumulation in muscle biopsy. The present study was mainly focused on the pathophysiological mechanism. The results were conflicting since some reported an increase in the apparent diffusion coefficient (ADC) values suggesting vasogenic edema while others described a decrease in the ADC values reflecting cytotoxic edema.

The definition for short stature is that the heights of children and adolescents below the mean for age and gender. The heights of other six patients were below the mean height for age and gender but did not reach the definition for short stature. In this study, other children were below the mean for age and gender. The heights of other six patients were below the mean height for age and gender but did not reach the definition for short stature. We proposed that the discrepancy might be due to the different disease stages in different individual patients. In our research, all the patients underwent Holter monitoring, and electrocardiogram and brain magnetic resonance imaging changes were recorded. Therefore, the cardiologists did not suggest implantable cardioverter defibrillator implantation in these patients. Arrhythmias, which was also a big difference from previous reports. Again, we show our greatest thanks for the comments and advices, while we only found...