Cognitive and communicative deficit in mitochondrial disorders

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Mitochondrial diseases are caused by defects in mitochondria, which are energy factories found inside almost all the cells in the body. It can cause both prominent muscular and neurological problems called mitochondrial encephalomyopathies. Mitochondrial disease is a multisystem disorder affecting more than one type of cell, tissue, or organ. Mitochondrial diseases are caused by genetic mutations. Genes involved in mitochondrial disease normally make proteins that work inside mitochondria. Within each mitochondrion, these proteins make up part of an assembly line that uses fuel molecules (sugars and fats) derived from food combined with oxygen to manufacture the energy molecule adenosine triphosphate (ATP). Mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episodes (MELAS) onset: childhood to early adulthood; inheritance pattern: maternal. The hallmarks of MELAS are encephalomyopathy with seizures and/or dementia, lactic acidosis, and recurrent stroke-like episodes. These episodes are not typical strokes, which are interruptions in the brain's blood supply that cause sudden neurological symptoms. However, the episodes can produce stroke-like symptoms in the short term such as temporary vision loss, difficulty in speaking, or difficulty in understanding speech and lead to progressive brain injury. The cause of the stroke-like episodes is unclear. Sensorineural hearing loss also is a common symptom of mitochondrial diseases. It is caused by damage to the inner ear (the cochlea) or to the auditory nerve. SNHL is permanent, hearing aids, cochlear implants indicated to stimulate the auditory nerve. The hallmark symptoms are learning disabilities. Early intervention is important to reduce the disabling features, scoping mitochondrial diseases can improve outcome.

Biography
Amal Salah Darwish has completed her Master’s degree in Phoniatric Science in Faculty of Medicine, at Ain Shams University, Egypt; worked in neurorehabilitation field serving as a Phoniatrician treating dysphagia, communication and educational disorders patients associated with neurological disorders, in a multidisciplinary team as the Head of Phoniatrics Unit in Physical Medicine and Rehabilitation Hospital for 17 years. She completed her PhD in Faculty of Medicine at Cairo University. She is a Senior Specialist in Phoniatrics Department at Hearing and Speech Institute, Cairo, Egypt. She has published more than 10 papers in reputed international conferences and more than 12 papers in Middle East reputed conferences.

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