Mitochondrial depletion syndromes in children and adults.

Abstract:
To highlight differences between early-onset and adult mitochondrial depletion syndromes (MDS) concerning etiology and genetic background, pathogenesis, phenotype, clinical presentation and their outcome. MDSs most frequently occur in neonates, infants, or juveniles and more rarely in adolescents or adults. Mutated genes phenotypically presenting with adult-onset MDS include POLG1, TK2, TyMP, RRM2B, or PEO1/twinkle. Adult MDS manifest similarly to early-onset MDS, as myopathy, encephalo-myopathy, hepato-cerebral syndrome, or with chronic progressive external ophthalmoplegia (CPEO), fatigue, or only minimal muscular manifestations. Diagnostic work-up or treatment is not at variance from early-onset cases. Histological examination of muscle may be normal but biochemical investigations may reveal multiple respiratory chain defects. The outcome appears to be more favorable in adult than in early-onset forms. Mitochondrial depletion syndromes is not only a condition of neonates, infants, or juveniles but rarely also occurs in adults, presenting with minimal manifestations or manifestations like in the early-onset forms. Outcome of adult-onset MDS appears more favorable than early-onset MDS.