Association of AHSG with alopecia and mental retardation (APMR) syndrome.

Abstract:
Alopecia with mental retardation syndrome (APMR) is a very rare autosomal recessive condition that is associated with total or partial absence of hair from the scalp and other parts of the body as well as variable intellectual disability. Here we present whole-exome sequencing results of a large consanguineous family segregating APMR syndrome with seven affected family members. Our study revealed a novel predicted pathogenic, homozygous missense mutation in the AHSG (OMIM 138680) gene (AHSG: NM_001622:exon7:c.950G>A:p.Arg317His). The variant is predicted to affect a region of the protein required for protein processing and disrupts a phosphorylation motif. In addition, the altered protein migrates with an aberrant size relative to healthy individuals. Consistent with the phenotype, AHSG maps within APMR linkage region 1 (APMR 1) as reported before, and falls within runs of homozygosity (ROH). Previous families with APMR syndrome have been studied through linkage analyses and the linkage resolution did not allow pointing out to a single gene candidate. Our study is the first report to identify a homozygous missense
mutation for APMR syndrome through whole-exome sequencing.