Facts About AS

Genetic Mechanisms and Severity of Symptoms

In general, all of the AS genetic mechanisms lead to a somewhat uniform clinical picture of severe to profound mental retardation, characteristic behaviors, and severe limitations in speech and language.

However, there are some clinical differences that correlate with the genotype, although there is great variability within each group. These correlations are broadly summarized below:

1. The deletion class is the most severely involved regarding microcephaly, seizures, relative hypopigmentation, motor difficulties (e.g., ataxia, muscular hypotonia, feeding difficulties), and cognition and language impairment.

2. UPD and ID individuals have better physical growth (e.g., less likely to have microcephaly) and have less movement and ataxia abnormalities and have a lower prevalence (but not absence) of seizures.

3. The ID group tends to have the highest cognitive, receptive language, fine motor, and gross motor abilities compared to other subtypes. The most advanced speech abilities occur in the ID group that is mosaic for the non-deletion imprint defect (about 20% of the ID group). These individuals may speak up to 50-60 words and use simple sentences.

4. The UBE3A mutation group generally is intermediate between the deletion and the ID classes in terms of microcephaly, seizures, motor difficulties, and language ability. Some with UBE3A may have relatively high cognitive abilities, fine motor, and gross motor skills as presumably the effect of their mutation (e.g., location and type of DNA change within the gene) causes less severe clinical problems.

Source: 7th edition Facts about Angelman Syndrome by Charles A. Williams, M.D., Sarika U. Peters, Ph.D., Stephen N. Calculator, Ph.D. in 2009