22q11.2 deletion syndrome

Genetics

-Deletion of ~3Mb on 22q11.2; NAHR

-AD, 90-95% de novo

-males = females

-complete penetrance

Clinical findings/Dysmorphic features

-Congenital heart disease (74% of individuals; particularly conotruncal defects, TOF)

-Palatal abnormalities (69%)

-Learning difficulties (70%-90%)

-Thymus hypo/aplasia --> Immune deficiency (77%)

-Parathyroid hypo/aplasia --> Hypocalcemia

-Facial: micrognathia, ear anomalies, cleft palate, short palpebral fissures, short upper lip

Etiology

-Prevalence 1:3000

Pathogenesis

-Deleted region is flanked by low copy number repeats (LCRs)

-Contains TBX1, responsible for phenotype

Genetic testing/diagnosis

-FISH, MLPA, CMA; 5% with normal test result on FISH

Others

-most common microdeletion syndrome

-22q11.2 duplication syndrome with same region: normal to intellectual disability/learning disability, delayed psychomotor development, growth retardation, and/or hypotonia