60

Trajectories of Processing Speed and Risk for Psychotic Disorders in 22q11DS: A Longitudinal Study

Ania Fiksinski[1], *Elemi Breetvelt*[2], *Lotte Van der Knaap*[1], *Sasja Duijff*[1], *Anne Bassett*[3], *Jacob Vorstman*[4]

Institution(s): *UMC Utrecht, Utrecht, the Netherlands* [1], *Toronto General Hospital, Toronto, ON, Canada* [2], *University of Toronto, Toronto, ON, Canada* [3], *Hospital for Sick Children, Toronto, ON, Canada*[4]

Background: Longitudinal clinical observations in individuals with 22q11.2 deletion syndrome (22q11DS) suggest that processing speed (PS) tends to decline over the course of development. Studies in early schizophrenia and Ultra High-Risk populations, including individuals with 22q11DS, have reported a relative weakness in PS and impaired PS has been proposed as a predictor for psychotic disorders. The current study investigates the trajectory of PS development and explores whether a deviation of the expected development is associated with increased risk for subsequent development of psychotic disorder in individuals with 22q11DS. **Methods:** Longitudinal PS data were available for 119 individuals with confirmed 22q11DS (46 (38.7%) males; mean age 17.0 (SD 3.8) years; n=17 (14.8%) with psychotic disorder). We assessed PS per timepoint with the relevant subtests of the age-appropriate Wechsler test of Intelligence (WISC-III, or WAIS-III). We calculated the difference in PS scores between first and last assessment (delta PS). We used the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) to determine the presence of a psychotic disorder. We investigated the association between delta PS and psychotic disorder with a binary logistic regression model. **Results:** Overall a modest decline in PS over time was observed (-0.65 IQ points per year; mean interval between first and last PS assessment of 6.3 (SD 3.0) years). Reaching trend level of significance, PS decline was more pronounced in the group with a psychotic disorder (-1.85 / year) than in the group without (-0.30 / year; p = 0.053). **Conclusions:** Consistent with previous findings for overall IQ, these pilot findings indicate that as a group, individuals with 22q11DS show a modest decline in PS over time and suggest that a steeper decline in PS might be associated with increased risk for psychosis. Importantly, PS is independent of Verbal IQ and largely independent of Full Scale IQ. Therefore, PS may contribute to understanding cognitive trajectories and their relevance to psychosis risk in 22q11DS. These preliminary findings provide a rationale for investigating PS in the 22q11DS IBBC to provide greater statistical power and enable construction of a “normative chart” for PS development.