

Background and Aims: Prospective longitudinal investigations are needed to identify causal processes leading to schizophrenia. However, there is presently no cost-effective way to identify children who are at risk of developing schizophrenia spectrum disorders.

Methods: The present study tested the feasibility of screening community samples to identify children, aged 9–12 years, who experience a triad of putative antecedents of schizophrenia identified in previous research, including: (1) speech and/or motor development lags/problems; (2) social, emotional, or behavioural problems; and (3) psychotic-like-experiences. 3410 children and 796 caregivers completed questionnaires.

Results: 12.3% of boys and 8.0% of girls displayed the antecedent triad. Consistent with schizophrenia incidence data, children of African-Caribbean origin presented elevated risk for the antecedent triad relative to white British children. Preliminary results from event-related potential recordings in children presenting the triad ($n=14$; mean age: 11 years, 4 months; mean IQ: 111) and in control children experiencing none of the antecedents ($n=9$; mean age: 11 years, 6 months; mean IQ: 109), indicate brain function abnormalities in triad children. The amplitude of the error-related negativity (Ne/ERN) component elicited by erroneous responses to NoGo trials in a Go/NoGo task, relative to correct responses to Go trials, was reduced in children experiencing the triad (controlling for age and IQ). Similar reduction in Ne/ERN in adults with schizophrenia is thought to indicate deficits in patients' internal monitoring of behaviour.

Conclusions: Questionnaire screening of community samples of children for the putative antecedents of schizophrenia is feasible. Accuracy of identification will be established only by follow-up studies.

S13.04

Does the environment increase sensitivity to develop psychosis in young adolescents?

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Background and Aims: Victimization in childhood may be associated with adult psychosis. This association was examined cross-sectional and longitudinal in the crucial developmental period of early adolescence.

Methods: Data were derived from standard health screenings of the Youth Health Care Divisions of the Municipal Health Services in Maastricht, the Netherlands. A self-report questionnaire was filled out by a total of 1290 adolescents to assess non-clinical psychotic experiences, as well as experiences of being bullied, sexual trauma and life events.

Results: The cross-sectional study showed that unwanted sexual experiences and being bullied were strongly and independently associated with psychotic experiences. In the same sample, it was shown that sexual trauma increased the risk for psychotic symptoms two years later. Life events contributed to the risk for psychosis over time and psychosis in turn gave rise to new life events. No significant association with bullying was found after controlling for confounders.

Conclusions: These results suggest that reported associations between childhood victimization and adult psychosis can be understood in a developmental framework of onset of at-risk mental states in early adolescence. Early and later psychological stress, if severe, may impact on the risk for psychosis in adolescence through mechanisms of person-environment interaction and correlation.

Symposium: Genomic imaging – affect and psychoses

S22.01

A Neuregulin 1 variant associated with altered brain structure and function

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Introduction: Neuregulin 1 is a replicated susceptibility gene for schizophrenia with effects on neuronal migration, axon guidance and myelination. A specific variant of NRG1, SNP8NRG243177, has been found to be associated with NRG1 expression although to date no study has established whether this variant is associated with altered brain structure or function in human subjects.

Methods: Data from 2 studies was used for our analyses. First we examined the effects of SNP8NRG243177 on IQ, Psychotic symptoms and cortical function in the Edinburgh High Risk Study. Secondly, we examined the effects of the same variant on white matter using T1 estimated white matter density and an analysis of fractional anisotropy (FA).

Results: The SNP8NRG243177 T allele is associated with psychotic symptoms, IQ and altered fronto-temporal function in people at high risk of schizophrenia for familial reasons. Secondly, we found that the same variant is associated with reduced density and integrity of white matter at the top of the internal capsule.

Conclusions: Our results add to a growing body of animal and human work supporting a mechanistic role for NRG1 in the aetiology of schizophrenia.

S22.02

Genotype effects on central processing of affective stimuli

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In neuropsychiatric disorders, serotonergic dysfunction may contribute to negative affect in alcoholism and major depression, while dysfunction of central dopaminergic neurotransmission has been associated with motivational disorders in addiction and schizophrenia. Animal experiments revealed that 1) neurodevelopmentally early social isolation stress exposure is associated with altered serotonin turnover and transporters and 2), neurodevelopmentally early lesion of the temporolimbic cortex is associated with increased striatal dopamine release. In human studies, dopamine and serotonin transporters and receptors interact with central processing of reward-indicating and affectively positive and negative stimuli, and specific alterations in these interactions can be observed in schizophrenic, alcoholics and affective disorders. Monoamine effects on central processing of emotionally salient stimuli are genetically influenced, and besides single gene effect, gene-gene interactions have been