Methods: Clinical high-risk symptoms, i.e. attenuated and transient psycvhotic symptoms (APS, BIPS) as well ascognitive and perceptive basic symptoms (BS), were assessed by well-trained psychologists performed assessments of risk symptoms, using established interviews. Differentiating between perceptive and non-perceptive/cognitive phenomena, impact of age groups on risk symptoms and their clinical significance (current psychosocial functioning deficits or non-psychotic DSM-IV axis-I disorder) was assessed by logistic regression analyses.
Results: Altogether, 9.9% of interviewees (N=689) reported APS, and 18.1% BS; 1.3% met APS, 3.3% COPER and 1.2% COGDIS criteria. For APS, an age effect was detected around age 16: compared to 16-40-year-olds, 8-15-year-olds reported more perceptive APS and lesser clinical significance of non-perceptive APS. Similar age effects of BS on prevalence and clinical significance that differed between perceptive and cognitive BS and followed brain maturation patterns were also detected: around age 18 for perceptive and in the early twenties for cognitive BS.
Discussion: These findings strongly suggest differential developmental factors affecting prevalence and clinical significance of APS and BS: While neurocognitive maturation might influence the presence of APS, brain maturation seems to influence the presence of BS. These findings emphasize the need to address the differential effects of perceptive and non-perceptive risk phenomena, and their interaction with age, also in terms of conversion to psychosis, in future studies.

F27. LATENT PROFILES OF DEVELOPMENTAL SCHIZOTYPY IN THE GENERAL POPULATION: ASSOCIATIONS WITH CHILDHOOD TRAUMA AND FAMILIAL MENTAL ILLNESS

Melissa Green*[,1], Richard J. Linscott[2], Kristin R. Laurens[3], Stacy Tzoumakis[4], Kimberlie Dean[4], Johanna C. Badcock[5], Vaughan J. Carr[4]
[1]University of New South Wales Prince of Wales Hospital; [2]University of Otago; [3]Australian Catholic University; [4]University of New South Wales; [5]University of Western Australia

Background: Latent liability for schizophrenia (schizotypy) is expressed in various combinations of cognitive, psychological, and behavioural characteristics evident in the general population. Historical models propose that distinct classes of individuals expressing different forms of schizotypy may represent manifestations of differential levels of genetic and environmental risk for schizophrenia (or related illness). However, there has been little investigation of developmental models of schizotypy in childhood. Here, we sought to delineate latent profiles of schizotypy among children aged 11–12 years, and to examine associations between emerging schizotypal profiles and parental history of mental illness (as a proxy for genetic risk), early life trauma, and childhood contact with health services for mental illness up to age 13 years.
Methods: Latent profiles of schizotypy were distinguished among 22,137 children (mean age=11.9 years) for whom intergenerational records of health service contact for mental illness and child protection reports were linked to the Middle Childhood Survey (MCS) within the NSW Child Development Study.[1] Selected MCS items were used to index schizotypy across six domains (Unusual Experiences, Cognitive Disorganisation, Impulsive Nonconformity, Introversion, Dysphoria and Self-Other disturbance). Using Latent Profile Analyses (LPA), four groups emerged according to patterns of expression across these domains; membership of three putative schizotypy groups were examined in relation to the likelihood of being exposed to childhood maltreatment and parental mental illness, and the child's own mental illness up to age 13 years, relative to the no risk group.
Results: Four classes emerged from the LPA: (1) 'schizotypy' (n=1323; 6%); (2) 'dysphoric pseudo-schizotypy' (n=4261, 19%); (3) 'introverted pseudo-schizotypy' (n=4473; 20%) and; (4) 'no psychopathology' (no-risk, n=12,080; 55%). Children in the schizotypy group had the greatest odds of being the subject of a child protection report (OR=2.9, 95% CI 2.6–3.3) and in contact with health services for mental illness by age 13 years (OR=2.7, 95% CI 2.2–3.3), relative to the no-risk group. The odds of child protection reports and childhood mental disorders were smaller, yet significantly increased, among dysphoric pseudo-schizotypy (ORs=1.9 and 1.8, respectively) and introverted pseudo-schizotypy (ORs=1.7 and 1.4, respectively), relative to the no-risk group. Parental mental illness exposure was greatest among the schizotypy (OR=2.3, 95% CI 2.0–2.6) subgroup, and was also increased in dysphoric pseudo-schizotypy (OR=1.6, 95% CI 1.5–1.8) and introverted pseudo-schizotypy (OR=1.4, 95% CI 1.3–1.5), relative to the no-risk group.
Discussion: We provide evidence for distinct subtypes of children expressing different forms of schizotypy among a large Australian sample from the general population. The subgroup of children labeled 'schizotypy' (6%) characterized by high levels of cognitive disorganisation, impulsive non-conformity, introversion, and self-other disturbance may be at highest risk for developing schizophrenia or other mental illness in adulthood, and had a greater likelihood of childhood maltreatment and parental mental illness history, than other 'pseudo-schizotypy' groups.
Reference:
1. Carr, V.J., Harris, F., Raudino, A., Luo, L., Kariuki, M., Liu, E., Tzoumakis, S., Smith, M., Holbrook, A., Bore, M., Brinkman, S.A., Lenroot, R.K., Dix, K., Dean, K., Laurens, K.R., Green, M.J. (2016) Cohort Profile: The New South Wales Child Development Study (NSW-CDS) – An Australian multi-agency, multi-generational, longitudinal record linkage study. 6:e009023 doi:10.1136/bmjopen-2015–009023.

F28. PROGRESSIVE POST-ONSET REORGANISATION OF MRI-DERIVED CORTICAL THICKNESS IN ADOLESCENTS WITH SCHIZOPHRENIA

Lena Palaniyappan*[,1], Anthony James[2]
[1]University of Western Ontario; [2]University of Oxford

Background: Cortical thickness changes continuously throughout healthy adolescence reflecting ongoing maturation. In schizophrenia, distributed abnormalities in cortical maturation are suspected. To study if these distributed changes are a result of a co-ordinated process, we investigated the structural covariance among the longitudinal post-onset thickness changes that occur across various brain regions in adolescent-onset schizophrenia.
Methods: 19 healthy adolescents and 18 age-matched patients with early-onset schizophrenia were scanned twice (~2 years' interval). The rate of change in cortical thickness was estimated both at lobar and sulcogyral level. Group level structural covariance was studied using a graph theoretical framework.
Results: At baseline, patients had distributed reduction in cortical thickness compared to controls, though this deviation was abolished over the next 2 years. Occipital cortex had a significantly deviant rate of change in patients (0.8% increase per year) compared to controls (2.5% thinning/year). Patients had a significant increase in covariance of right anterior insula and calcarine sulcus with rest of the brain.
Discussion: Post-onset structural changes in EOS are not a result of random, mutually independent processes. A spatially interconnected reorganization process, distinct from normal maturational events may underlie these distributed changes.

F29. HIGH-RISK SYMPTOMS FOR PSYCHOSIS IN ADOLESCENTS AND ITS RELATIONSHIP WITH FAMILY BURDEN

Olga Puig-Navarro*[,1], Elena De la Serna[2], Jordina Tor[3], Anna Sintes[3], Gisela Sugranyes[1], Marina Redondo[1], Marta Pardo[3], Montse Dolz[3], Inmaculada Baeza[1]
[1]Hospital Clinic of Barcelona; [2]Centro de Investigación Biomédica en Red de Salud Mental; [3]Hospital St Joan de Déu

Background: High-risk symptoms for psychosis (HRS) and substantial functional impairment occurs early in the course of psychosis (Fusar-Poli et al., 2015). Many patients with HRS are adolescents who are still living at home and are highly reliant on their relatives for support. Objectives: (1) To compare the family burden of caregivers of adolescents with HRS with carers of an age and gender matched healthy control group (HC), (2) to examine the relationships between different family burden aspects and high-risk symptoms for psychosis in the HRS sample.
Methods: Sample: 68 HRS subjects (15.3 ± 1.7 years, 66% females) and 42 HC subjects (15.5 ± 1.5 years, 66% females) from a prospective longitudinal study including help-seeking subjects who met HRS criteria (Child and Adolescent Psychiatry and Psychology departments of Hospital Clínic and Sant Joan de Déu, Barcelona, Spain). Inclusion criteria: age 10–17 years, meeting criteria for 1) attenuated positive or negative symptoms in the previous 12-months, 2) brief intermittent psychotic symptoms, 3) first or second degree relative with schizophrenia or schizotypical disorder plus impairment of functioning. Exclusion criteria: IQ<70, having a diagnosis of ASD. For HC subjects, exclusion criteria were having 1st or 2nd degree familiar with a psychotic disorder; a diagnosis of ASD and/or IQ<70. Instruments: the Semistructured Interview for Prodromal Syndromes and Scale of Prodromal Symptoms (SIPS/SOPS), the Hamilton Depression Scale and the Young Mania Scale for affective symptoms, a cognitive battery and the Caregiver Burden Inventory (CBI) which is a measure of family burden that has been validated in first-episode patients (McCleery et al., 2007). Caregivers' responses are rated on a Likert scale from 0 (not at all descriptive) to 4 (very descriptive) and distributed in 5 factors: Time-Dependence Burden (T-Db), Developmental Burden (Db), Physical Burden (Pb), Social Burden (Sb), and Emotional Burden (Eb). High scores indicate greater perceived burden.
Results: HRS and HC subjects did not significantly differ in age (t=0.68, p=0.497) and sex (X2=0.003, p=0.958). Intellectual quotient was higher in HC (mean=105.4 ± 11.28) than in HRS subjects (98.63 ± 14.27, t=2.53, p=0.013). Mean scores of high-risk symptoms in HRS subjects were higher than in HC subjects (t>-9.35, p<0.001): positive: 9.12 ± 4.76, negative:11.16 ± 5.49, disorganitzation:4.96 ± 3.03, general: 8.22 ± 3.83, and total symptoms:33.24 ± 12.59. HRS subjects had also higher scores in depressive (10.54 ± 7.54, t=-9.75, p<0.001) and manic symptoms (3.61 ± 4.53, t=-5.10, p<0.001). Caregivers of HRS subjects showed higher scores than caregivers of HC in all CBI subscales (t>-5.59, p<0.001; T-Db: 6.36 ± 5.01 vs 1.02 ± 1.60, Db: 7.42 ± 6.51 vs 0.45 ± 1.23, Pb: 7.00 ± 6.13 vs 0.58 ± 1.80, Sb: 4.77 ± 4.66 vs 0.64 ± 1.95, Eb: 4.86 ± 4.64 vs 0.93 ± 2.66). Time-Dependence burden reported by caregivers of HRS patients was significantly correlated with the SOPS total score (r=0.303, p=0.014) and with the negative SOPS subscale score (r=0.308, p=0.012). The relationship between negative SOPS symptoms and time-dependence burden remained after controlling for affective symptoms (F=5.07, p0.028) and intelligence quotient (F=7.27, p=0.009). This factor represents objective aspects of burden arising from demands on the caregiver's time.
Discussion: Caregivers of adolescents meeting criteria for HRS showed high perceived burden compared with caregivers of healthy adolescents. Time-dependence burden reported by caregivers was related to negative prodromal symptoms of HRS subjects. These findings highlighted that family burden occurs early in the course of psychosis. Acknowledgments: ISC-III/FIS, FEDER.

F30. SMARTPHONE APPLICATION "ROBIN": FEASIBILITY, ENGAGEMENT AND SATISFACTION OF A SMARTPHONE APPLICATION APPROACH TO SUPPORT TREATMENT OF (ATTENUATED) PSYCHOTIC SYMPTOMS IN ADOLESCENTS

Nina Traber-Walker*[,1], Sibylle Metzler[1], Miriam Gerstenberg[1], Susanne Walitza[1], Maurizia Franscini[1]
[1]University Hospital Zurich

Background: There is increasing interest in using mobile technologies such as smartphones application in mental health care. First research results from the use of smartphone applications in the treatment of psychotic disorders are promising. Current analysis showed, that especially young people would be interested in smartphone applications within treatment settings. However, there is a lack of investigations in this population. There is also little known about mobile technologies in the work with attenuated psychotic symptoms. To address these gaps, we developed "Robin", a specific smartphone application to support the therapy of adolescents with attenuated or full-blown psychotic symptoms. The smartphone application targets medication adherence, real-time symptom assessment and provides help coping with symptoms and stressful situations in daily life.
Methods: Based on existing literature and our clinical expertise within a specialized outpatient care for adolescents with (attenuated) psychotic symptoms, a first modular version of the app was developed and adapted after first pilot investigations with patients (N=7, Age 14–18) and therapists (N=10). Participants of the pilot investigation completed a questionnaire regarding usability and acceptance of the application. Furthermore, we investigated how the patients used the application in their daily life by analyzing the user data from the application. In September 2017, the development of the smartphone application has been finalized and we have started with a systematic clinical evaluation study for testing the efficiency of the app. The application is only used in combination with psychotherapy in our university hospital for child and adolescent psychiatry.
Results: The data from our pilot investigation showed, that "Robin" was accepted by clinicians and patients. All clinicians said they would like to use the application to enrich their therapeutic approaches. All patients in the pilot project used the application in their daily life. Especially modules with information about symptoms and coping strategies were frequently used. Since September 2017, first patients have been included to the systematic evaluation study. In Florence 2018, we will present first data from this study about feasibility, engagement and subjectively perceived benefit of the smartphone application.
Discussion: The first feedbacks from the pilot investigation were encouraging. The findings were used to improve and adapt the application. Since September 2017, the application is used in psychotherapy and an evaluation study has started. This is one of the first clinical trials to test the efficacy of a specific application developed for adolescents with psychotic and with attenuated psychotic symptoms.

F31. POLYGENIC RISK SCORES AND EARLY RISK ENDOPHENOTYPES IN CHILDREN AT GENETIC RISK OF SCHIZOPHRENIA AND BIPOLAR DISORDER: IMPLICATIONS FOR THE DEFINITION OF THE CHILDHOOD RISK STATUS

Thomas Paccalet*[,1], Alexandre Bureau[2], Elsa Gilbert[3], Nicolas Berthelot[4], Pierre Marquet[3], Sébastien Boies[5], Valérie Jomphe[5], Daphné Lussier[5], Michel Maziade[3]
[1]CIUSSS de la Capitale-Nationale - CERVO Brain Research Center; [2]Laval University; [3]Université Laval & CERVO Brain Research Centre; [4]Université du Québec à Trois-Rivières; [5]CERVO Brain Research Centre

Background: Polygenic risk scores (PRS) of schizophrenia (SZ) or bipolar disorder (BD) are derived from genomewide association studies discriminating unrelated patients from controls. We have recently shown that both the SZ PRS and the BD PRS also distinguished affected patients from their non-affected adult relatives in a familial sample.[1] Furthermore, the association of the SZ PRS with BD subjects and, reciprocally, of the BD PRS with SZ subjects support the shared susceptibility for these diseases.[1] Importantly, new studies suggest that PRS would also distinguish the offspring at genetic risk from controls[2] and may be associated with psychotic-like experiences and negative symptoms in adolescents of the