individuals who weren't sensitive to the psychotomimetic effects of Δ9-THC, individuals who developed transient psychotic-like symptoms (~70% of the sample) had significantly lower baseline Glx (placebo; P=0.023) and a 2.27-times higher increase following Δ9-THC administration. Lower baseline Glx values (r=-0.55; P=0.026) and higher previous cannabis exposure (r=0.52; P=0.040) were associated with a higher Δ9-THC-induced Glx increase.

Discussion: These results suggest that increase in striatal glutamate levels may underlie acute cannabis-induced psychosis while lower baseline levels may be a marker of greater sensitivity to its acute psychotomimetic effects and may have important public health implications.

O3.5. IMPROVED COGNITION WITH EARLY SUBSTANCE USE CESSATION IN FIRST-EPISODE PSYCHOSIS – 10 YEARS OUTCOME IN THE TIPS SAMPLE PATIENTS

Melissa Weibell*[,1], Jan Olav Johannessen[2], Bjørn Auestad[3], Jørgen G. Bramness[4], Kolbjørn Brønnick[1], Ulrik Haahr[5], Inge Joa[2], Tor Ketil Larsen[6], Ingrid Melle[7], Stein Opjordsmoen[8], Bjørn Rishovd Rund[4], Jan Ivar Røssberg[9], Erik Simonsen[5], Per Vaglum[8], Helen Stain[10], Svein Friis[4], Wenche ten Velden Hegelstad[2]

[1]Stavanger University Hospital; [2]TIPS – Centre for Clinical Research in Psychosis, Stavanger University Hospital [3]University of Stavanger; [4]University of Oslo; [5]Psychiatry East, Denmark; [6]University of Bergen; [7]NORMENT Centre for Psychosis Research, University of Oslo; [8]Institute of Psychiatry, University of Oslo [9]NORMENT KG Jebsen Centre for Psychosis Research, Oslo University Hospital and Institute of Clinical Medicine, University of Oslo; [10]Leeds Trinity University

Background: Neurocognitive deficits may be a risk factor for, but also a result of, psychosis. Non-remitting symptoms, premorbid functioning, level of education, and socioeconomic background are known associations. A possible confounder is substance use, which is common among patients with psychosis and often accompanied by worse clinical outcomes. The literature, however shows mixed results for the effect of substance use on neurocognitive outcomes. In this project, the long-term associations of substance use with neurocognition in a representative sample of first-episode psychosis patients were investigated.

Methods: The sample consisted of 195 patients who were assessed for symptom levels, function and neurocognition at 1, 2, 5 and 10 years after first treatment. Test scores were grouped into factor-analysis based indices: Motor speed, verbal learning, visuomotor processing, verbal fluency, and executive functioning. We also used a standardized composite score of all tests. Patients were divided into four groups based on substance use patterns during the first two years of treatment: persistent users, episodic users, stop-users and non-users. Data were analyzed using linear mixed effects modelling.

Results: Gender, premorbid academic functioning and previous education came out as the strongest predictors of neurocognitive trajectories. Patients who stopped using substances within the first two years of follow-up, improved over time on motor speed and verbal learning indices, whereas the other groups did not. Longitudinal course was parallel for all four groups with regards to verbal fluency, while patients who stopped using substances had better scores compared to non-users. Persistent users demonstrated impaired visuomotor processing speed compared to non-users. Within the stop- and episodic use groups, patients with narrow schizophrenia diagnoses had poorer scores compared to patients with other diagnoses on verbal learning and on the overall composite neurocognitive index.

Discussion: This study is one of very few long-term studies on neurocognitive impairments in first episode psychosis focusing specifically on substance use. Early cessation of substance use was associated with less neurocognitive deficits and some improvement over time on some cognitive measures, indicating a milder illness course and superior cognitive reserves to draw from in recovering from psychosis.

O3.6. ONSET ANTICIPATION WITH CANNABIS USE IN AFFECTIVE AND NON-AFFECTIVE PSYCHOSIS IN FIRST EPISODE PATIENTS

Luccas Coutinho*[,1], Ana Luiza Franco[1], Janaina Garcia[1], Cinthia Higuchi[1], Daniel Cavalcante[1], Sintia Belangero[1], Rodrigo Bressan[1], Quirino Cordeiro[2], Cristiano Noto[1], Ary Gadelha[1]

[1]Universidade Federal de São Paulo (UNIFESP); [2]Santa Casa de misericordia de São Paulo

Background: Cannabis is a drug largely used by First Episode Psychosis (FEP) patients. Also, cannabis use in adolescence is related to higher risk and earlier onset of psychosis. Some studies showed that the earlier onset of psychosis may be related to reduction of cortical thickness in non-affective psychosis patients. The impact on specific diagnosis in FEP patients (affective and non-affective) has not been previously explored. We aim to verify if affective and non-affective psychosis are differentially related to cannabis use and age of psychosis onset.

Methods: Our cohort comprised 175 first-episode individuals assessed at admission of the psychiatric emergency service and reassessed in 3 follow up points. Diagnosis was performed according the Structured Clinical Interview for DSM-IV (SCID-1) applied by trained psychiatrists. The age of psychotic onset was determined during the interview as the first period the symptoms reached severity allowing a psychotic disorder diagnosis. Cannabis use variables were collected from the cannabis section of Addiction Severity Index-6, and the age of first cannabis use was dichotomized in before and after 16 years. Specific diagnosis (affective, non-affective) was extracted according SCID-I diagnosis. Also, we defined drug-induced psychosis as a third group of comparison. We used R-Studio for all data analysis.

Results: The mean age of our sample was 25.42 (SD=7.12) years, mean age of psychosis onset was 24.65 (SD=7.16) years and 65.0% of the subjects were male. The non-affective psychosis (65.6%) was the most prevalent specific diagnosis, followed by affective psychosis (28.1%).

Cannabis use was reported by 41.2% of the individuals, and 53.8% of them used cannabis before 16 years. Those who used cannabis in adolescence had a lower mean age of psychotic onset, however, the mean comparison was not significant (CI 95: -7.17 to 0.69). There was no association between the specific diagnosis, cannabis variables and age of psychosis onset. Those who used cannabis before 16 years had higher prevalence of drug-induced psychosis (X-squared = 13.907, df = 2, p-value = 0.007) in comparison with those who used after.

Discussion: The individuals who reported adolescence cannabis use had lower mean of psychosis onset age, but we could not find statistical support to validate our initial hypothesis: that non-affective psychosis is related to age of psychosis onset. The association between drug-induced psychosis and use of cannabis before 16 years reinforces the risk of cannabis misuse in adolescence.

O3.7. SMOOTH PURSUIT EYE MOVEMENTS INDICATE BIOLOGICAL DISTINCTION BETWEEN CANNABIS-USING AND NON-USING PATIENTS IN EARLY PSYCHOSIS

Musa Sami*[,1], Luciano Annibale[2], Aisling O'Neill[2], Tracey Collier[2], Chidimma Onyejiaka[3], Savitha Eranti[4], Debasis Das[5], Marlene Kelbrick[6], Philip McGuire[2], Steve Williams[2], Ulrich Ettinger[7], Sagnik Bhattacharyya[2]

[1]King's College London, Institute of Psychiatry; [2]King's College London; [3]South London and Maudsley NHS Trust; [4]East London Foundation NHS Trust; [5]Leicester Partnership NHS Trust; [6]St Mary's Hospital, Northampton; [7]University of Bonn

Background: Oculomotor abnormalities are among the most widely replicated findings in psychotic disorders with impairments in Smooth Pursuit Eye Movements (SPEM) and Antisaccades (AS) tasks. Cannabis-use may be a clinically relevant demarcating factor in early psychosis seen in around half of FEP patients at presentation and indicative of worse prognosis. No study to date has aimed at differentiating cannabis-using from non-using patients using AS and SPEM. Differences in eye movement measures between groups would indicate altered neurobiology between cannabis-using and non-using patients. We thus aimed to determine whether abnormalities in SPEM and AS are indicative of neurobiological differences between Early Psychosis patients who use cannabis (EPC) and those who do not use cannabis (EPNC).
Methods: We undertook the EfCiP study (the Effect of Cannabis in Psychosis) consisting of four groups: Early Psychosis patients who used cannabis (EPC) (n=28), Early Psychosis patients who did not use cannabis (EPNC) (n=25), healthy controls who used cannabis (HCC) (n=16) and healthy controls who did not use cannabis (HCNC) (n=22). The smooth pursuit stimulus used a sinusoidal waveform at three target frequencies (0.2, 0.4 and 0.6 Hz) across a horizontal range. Participants performed 40 antisaccade trials using a horizontal step task with an equal number of left and right stimuli in randomised order. As primary outcomes we tested measures robustly associated with abnormalities in psychosis: maintenance gain to index smooth pursuit and antisaccade percentage errors. We used one-way ANCOVA on four levels (EPC, EPNC, HCC and HCNC) with post-hoc Bonferroni correction. Covariates entered into the model were age, sex, AUDIT and Fagerstrom's scores.
Results: EPC and EPNC were clinically indistinguishable with no difference across clinical measures: including GAF, PANSS, duration since diagnosis, days spent in hospital, chlorpromazine equivalents, proportion with affective component to psychosis or schizophreniform spectrum disorder. Participants with EPC had higher indices of cannabis use and also scored higher on Fagerstrom's and AUDIT scores to index smoking and alcohol use respectively.
Repeated measures ANCOVA revealed a significant effect of task, indicating that mean gain decreased as SPEM frequency increased. There was a significant Group effect ($F3,83=3.514$, $p=0.019$, $\eta p^2=0.113$). Post-hoc tests revealed significantly reduced mean gain for EPNC vs EPC ($p=0.021$). There was no significant difference between HCC and HCNC ($p=1$). There was no significant effect on SPEM gain for any covariate.
When controls were combined there was a significant reduction in SPEM gain for EPNC vs EPC (Hedge's $g=0.830$, $p=0.014$) and trend level reduced gain for EPNC vs all controls (Hedge's $g=0.594$, $p=0.058$) but no difference between EPC and all controls ($p=0.998$)
There was a numerical decrease in antisaccades percentage error rate such that EPC≈EPNC>HCC>HCNC but there was no significant group effect ($p>0.35$).
Discussion: This study demonstrates neurobiological distinction between cannabis using and non-using patients. There is evidence of impairment of SPEM in the EPNC group but not in the EPC group, whereas there is no discernable effect of cannabis use on SPEM gain in the healthy situation. This is consistent with lower psychosis liability in EPC than EPNC and suggests an additive component for cannabis use in the EPC group. Differential performance in SPEM and AS may indicate impairments in specific circuitry between groups. Further work should look to delineate the neurobiological substrates for this distinction.

O3.8. THE ROLE OF ABERRANT SALIENCE IN THE ASSOCIATION BETWEEN EARLY CANNABIS USE AND PSYCHOTIC-LIKE EXPERIENCES

Deidre Anglin*[,1], Aleksandr Tikhonov[2], Rachel Tayler[1], Jordan DeVylder[3]
[1]CCNY; [2]Rutgers University; [3]Fordham University

Background: Early onset cannabis use is associated with psychosis risk in a dose response fashion. Aberrant salience is a cognitive approach to perception and information integration believed to be involved in the development of psychosis. Recent studies suggest aberrant salience explains severity of cannabis-induced psychotic symptoms, but does not significantly distinguish cannabis users from non-users (e.g., Bloomfield et al., 2016), while other studies show cannabis users exhibit higher aberrant salience than non-users (e.g., Bernardini et al., 2018). The aim of the present study was to examine the degree to which aberrant salience explains any association between cannabis use and psychotic-like experiences (PLEs) in a diverse non-treatment-seeking population.
Methods: A Northeastern U.S. urban undergraduate sample of 816 racial minority or first/second-generation immigrant emerging adults completed a battery of self-report inventories on a computer in a research lab. Data from the Prodromal Questionnaire (PQ), Aberrant Salience Inventory (ASI), and cannabis use items from a Substance Use Questionnaire were used in multiple linear regression models to determine associations between frequency of recent (past 3-months) cannabis use, aberrant salience, positive subscale PQ items, and positive PQ items endorsed as distressing. Among users, associations were examined between age of onset of cannabis use (<15, >14), PLEs, and aberrant salience. The Hayes PROCESS application was employed to quantify the significance of indirect associations between ASI scores and the association between cannabis use frequency and PLEs. Trait anxiety was controlled for in the regression models.
Results: Recent cannabis use was endorsed by 25% of the sample, and lifetime use, 33%. The average age of onset was 16.6 (SD=2.22) with a range from 12 to 26. The mean number of PLEs and distressing PLEs were significantly higher among participants who used cannabis frequently (Mean PLE= 15.51(10.55) compared to those who never used or only experimented (Mean PLE= 14.01(SD=9.08). Mean total ASI scores were also significantly higher for users (Mean diff=1.8794, $p=.025$). Results from multiple linear regression models and mediation analyses indicated the association between recent cannabis use frequency and PLEs was significantly explained by higher levels of ASI among users. In the model for distressing PLEs, we found that recent cannabis use and aberrant salience interacted synergistically to increase distressing PLEs. Specifically, the gradient of the regression line slope relating cannabis use to PLEs for those with higher ASI scores was steeper (.360) than the slope for those with lower ASI scores (.169). We also found that earlier age of onset (age 12–14) was associated with a higher number of distressing PLEs [(6.81 (SD=6.37) vs. 4.76 (SD=5.41); $p=.002$] and that this was partially explained by higher ASI scores among this group.
Discussion: The association between cannabis use and early onset of such use and PLEs was explained by the cognitive tendency to misjudge the salience of stimuli. When cannabis use is combined with this aberrant salience, there may be greater risk for psychotic phenomena experienced as distressing and perhaps more clinically significant. While this should be examined further in a clinically high-risk sample, our findings highlight a potential cognitive area to assess and even target in clinical high-risk populations.

O4. ORAL SESSION: COGNITION

O4.1. A NOVEL, BRIEF PSYCHOLOGICAL INTERVENTION TO TARGET ILLNESS ENGULFMENT IN ENDURING SCHIZOPHRENIA: IMPACT ON SELF-ESTEEM, INTERNALIZED STIGMA, AND BEYOND

Susanna Konsztowicz*[,1], Casandra Roy Gelencser[2], Catherine Otis[3], Martin Lepage[3]
[1]McGill University; [2]Université du Québec à Montréal; [3]Douglas Mental Health University Institute