

S18. Symposium: CAN WE IMPROVE THE PREDICTION OF THE ONSET OF PSYCHOSIS (Organised By AEP Section On Neuroimaging)

S18.01

Neural correlates of executive function and working memory in the 'at risk mental state'

M.R. Broome, P. Matthiasson, P. Fusar-Poli, J.B. Woolley, L.C. Johns, P. Tabraham, E. Bramon, L. Valmaggia, S.C. Williams, M. Brammer, X. Chitnis, P.K. McGuire. *Institute of Psychiatry, London, United Kingdom*

Background and Aims: People with 'prodromal' symptoms have a very high risk of developing psychosis. We used functional MRI to examine the neurocognitive basis of this vulnerability.

Method: Cross-sectional comparison of subjects with an ARMS (n=17), first episode schizophreniform psychosis (n=10) and healthy volunteers (n=15). Subjects were studied using functional MRI while they performed an overt verbal fluency task, a random movement generation paradigm and an N-Back working memory task.

Results: During an N-Back task the ARMS group engaged inferior frontal and posterior parietal cortex less than controls but more than the first episode group. During a motor generation task, the ARMS group showed less activation in the left inferior parietal cortex than controls, but greater activation than the first episode group. During verbal fluency using 'Easy' letters, the ARMS group demonstrated intermediate activation in the left inferior frontal cortex, with first episode groups showing least, and controls most, activation. When processing 'Hard' letters, differential activation was evident in two left inferior frontal regions. In its dorsolateral portion, the ARMS group showed less activation than controls but more than the first episode group, while in the opercular part of the left inferior frontal gyrus / anterior insula activation was greatest in the first episode group, weakest in controls and intermediate in the ARMS group.

Conclusions: The ARMS is associated with abnormalities of regional brain function that are qualitatively similar to those in patients who have just developed psychosis but less severe.

S18.02

White matter changes from the prodrome to first psychotic episode

J.B. Woolley¹, G.J. Barker², X. Chitnis², M. Broome¹, L. Valmaggia¹, L. Johns¹, P. Tabraham¹, P.K. McGuire¹.
¹ *Section of Neuroimaging, Institute of Psychiatry, Kings College, London, United Kingdom* ² *Centre for Neuroimaging Sciences, Institute of Psychiatry, Kings College, London, United Kingdom*

Background: There is increasing evidence that changes in connections linking brain regions, as well as grey matter volumetric abnormalities are important in schizophrenia. The extent to which these are related to being at risk of psychosis as opposed to having a psychotic disorder is unclear. We will review the diffusion tensor imaging (DTI) findings which inform us about white matter integrity and organization, and relate it to our own work which compares grey matter volumes and white matter integrity in people at high risk of psychosis, patients with first episode psychosis, and healthy volunteers. We will also discuss the relationship of these findings to clinical symptoms and outcome.

Methods: 30 subjects with an 'at risk mental state' (PACE criteria), 15 first psychotic episode patients and 30 controls were studied using an SPGR sequence and DTI.

Results: Both the volumetric and DTI datasets were analysed using voxel based techniques in standard space. There were frontal and temporal grey matter reductions in the first episode group and more modest temporo-parietal volume reductions in the 'at risk' group. The first episode group had reduced fractional anisotropy in the superior longitudinal fasciculus bilaterally, left anterior corpus callosal and right superior fronto-occipital tracts relative to controls, with qualitatively similar but less severe reductions in the 'at risk' subjects.

Conclusions: Abnormalities in the frontal and temporal grey matter and the tracts connecting them were evident in patients with first episode schizophrenia, with similar but less marked abnormalities in subjects with an 'at risk' mental state.

S18.03

Cognitive capability of individuals at risk with and without transition to psychosis

M.O. Pflueger, U. Gschwandtner, J. Aston, G. Berger, S. Borgwardt, M. Drewe, M. D'souza, E. Rechsteiner, R.D. Stieglitz, A. Riecher-Roessler. *Department of Patient Psychiatry, University Hospital, Basel, Switzerland*

Objectives: To compare neuropsychological functions of individuals at risk (IR) for psychosis and patients with a first episode of psychosis (FE) with healthy control subjects (HC). And to determine cognitive factors which have the potential to discriminate IR with (IRtrans) and without (IRnon-trans) transition to psychosis.

Methods: N = 60 prodromal IR and N = 51 healthy control subjects were assessed with a comprehensive neuropsychological test battery. Besides general intelligence the test battery covered two functional domains (executive and attentional functions) and working memory. Within a follow up period of at least 30 month N = 19 IR transitioned to psychosis and N = 30 IR still have been followed up.

For each patient group (FE and IR), cognitive profiles were constructed by means of z-values adjusted for demographic and medication influence. The HC mean performance level was used as baseline of each group profile. A further profile was constructed by differential values considering IRtrans versus IRnon-trans. Comparisons were carried out by MANOVA and post-hoc t-tests.

Results: In all functional domains FE and IR performed below HC except for specific sustained attention measures. There were no significant differences between FE and IR.

Executive functions and working memory measures were more compromised in IRtrans as compared to IRnon-trans.

Conclusions: Neuropsychological deficiencies precede psychotic breakdown. This indicates that neuropsychological assessments of affected domains may support early detection of psychosis.

S18.04

Ventricle volumes in emerging psychosis. A cross-sectional and longitudinal MRI study

G.E. Berger^{1,3}, S.J. Wood^{1,2}, D. Velakoulis², A. Ang², W.J. Brewer², L.J. Phillips^{2,4}, A.R. Yung¹, T.M. Proffitt¹, C. Pantelis², P.D. McGorry¹. ¹ *ORYGEN Research Centre, University of Melbourne, Melbourne, VIC, Australia* ² *Melbourne Neuropsychiatry Centre, University of Melbourne, Melbourne, VIC, Australia* ³ *Department of Psychiatry, University Hospital, Basel,*

Switzerland ⁴ *Department of Psychology, University of Melbourne, Melbourne, VIC, Australia*

Objective: Ventricular enlargement is one of the most consistent brain changes associated with schizophrenia. However, there are only few cross-sectional studies in genetic at risk individuals, and no studies in individuals meeting ultra high risk (UHR) criteria of developing frank psychosis. This study investigates the timing of ventricular volume changes across the different stages of emerging psychotic disorders.

Methods: We measured ventricular volumes in 473 subjects comparing 135 UHR subjects (of whom 39 subsequently developed a psychotic illness), 162 first-episode psychosis (FEP) subjects, 89 chronic schizophrenia (CS) subjects with 87 normal controls (NC). 29 UHR, 25 FEP, 13 CS, and 24 HV had longitudinal follow up scans.

Results: We found significant ventricular enlargement in FEP and CS, but not in UHR and NC. Longitudinal analysis confirmed ventricular enlargement in non-affective psychosis only. UHR patients had normal ventricular volumes regardless of whether they made transition to frank psychosis or not.

Conclusion: Our results are suggestive that ventricular enlargement is a consequence of transition and/or progression of illness rather than a risk marker in that it is apparent only after the onset of frank psychosis, with prominence in patients with schizophrenia-like psychoses. The results parallel our previous study in that hippocampal volumes were reduced in CS and normal in patients having non-schizophrenic psychoses as well in UHR individuals.

S18.05

Association of regional grey matter abnormalities with cognitive functions in the at risk mental state

S.J. Borgwardt ^{1,2,3}, E.W. Radue ², P.K. McGuire ³, A. Riecher-Rössler ¹. ¹ *Department of Outpatient Psychiatry University Hospital Basel, Basel, Switzerland* ² *Department of Neuroradiology, University Hospital Basel, Basel, Switzerland* ³ *Institute of Psychiatry, King's College, London, United Kingdom*

Objective: There is some evidence that psychosis and its prodrome are associated with neuroanatomical abnormalities and cognitive deficits. However, the brain structure - cognition associations in this disorder are less clear. The aim of the study was to investigate brain structure – cognition associations in individuals with an At Risk Mental State (ARMS) relative to patients with first-episode psychosis and healthy volunteers.

Methods: The subjects were recruited through a specialised clinic for the early detection of psychosis (FEPSY) at the Psychiatric Outpatient Department, University Hospital Basel. We examined structural brain abnormalities, identified using voxel-based morphometry (VBM), and cognitive function (general intelligence, attention, executive function, and working memory) in 32 individuals at high risk of developing psychosis (ARMS), 22 patients with a first-episode psychosis and 11 healthy volunteers.

Results: We expect that regional grey matter volume abnormalities are associated with specific cognitive deficits in people with an ARMS.

Conclusions: We predict that some associations are specific to individuals with an ARMS and may be a correlate of their increased vulnerability to psychosis. Furthermore, we expect structure –

cognition associations within the high risk group to be associated with the subsequent onset of psychosis.

S19. Symposium: PSYCHIATRY AND THE CULTURES OF SUBJECTIVITY (Organised By The AEP Section on Philosophy And Psychiatry)

S19.01

On capturing subjectivity in narrative

T. Thornton. *Department of Philosophy and Mental Health, University of Central Lancashire, Preston, Lancashire, United Kingdom*

In this paper I distinguish between two claims. 1) That subjects or selves are constituted by narratives. 2) That narratives play an essential and irreducible role in capturing subjectivity. I will argue that whilst the reduction of selves to narratives - in claim 1 - fails, claim 2 helps highlight the essential role of normativity in characterising subjects' mental lives. But the irreducibility of normativity places principled limits on the range of phenomena on which psychiatry can aim to shed light.

S19.02

Subjectivity and cultures in psychiatry

D. Moussaoui. *Psychiatric Centre, Ibn Rushd University, Casablanca, Morocco*

Subjectivity is an essential part of psychiatry, often forgotten in daily clinical work, despite the remarkable demonstrations done by the German school of phenomenology in the 20th century concerning this aspect of our specialty.

As a matter of fact perception of internal and external time, social space, relationship to pleasure and religion are essentially linked to culture. One of the most important determinants of culture is economy, which is itself largely determined by geography and history of the region.

The author will present the intertwinement existing between these variables, and its impact on the clinical picture and the subjective interpretation of the patient, taking depression as a model for this theoretical construction.

S19.03

Objective evidence and subjective narratives in medicine and psychiatry

J. Lázaro. *Department of Psychiatry, School of Medicine, Universidad Autónoma de Madrid, Madrid, Spain*

Evidence Based Medicine and Psychiatry has had a (controversial) success in the last years. Narrative Based Medicine and Psychiatry has emerged subsequently as a complementary (not an alternative) movement. The object of this presentation is the following question: To what extent are these movements something new for medical science? Or, to what extent are they simply the current expression of an age-old tradition in the history of medicine and psychiatry? Our objective here is to review a series of possible (and scantily commented) historical antecedents, not so much of Evidence- and Narrative-Based Medicine and Psychiatry in themselves, as of the scientific aspirations and the human needs that are behind them.