

<sup>5</sup> *Universitat Politècnica de València, Instituto de Aplicaciones de las Tecnologías de la Información y de las Comunicaciones Avanzadas, Valencia, Spain*

<sup>6</sup> *Laboratoire Bordelais de Recherche en Informatique, Unité Mixte de Recherche CNRS UMR 5800, PICTURA Research Group, 351, cours de la Libération, Talence, France*

<sup>7</sup> *Oulu University Hospital, Department of Diagnostic Radiology, Oulu, Finland*

<sup>8</sup> *Oulu University Hospital, Department of Psychiatry, Oulu, Finland*

<sup>9</sup> *University of Cambridge, Department of Psychiatry, Cambridge, United Kingdom*

<sup>10</sup> *University of Cambridge, Behavioural and Clinical Neuroscience Institute, Cambridge, United Kingdom*

\* *Corresponding author.*

**Introduction** The effects of long-term antipsychotic medication use on structural brain changes in psychoses are still unknown. Severity and duration of illness are key confounders when evaluating antipsychotic effects on brain morphology.

**Objectives** Understanding the role of antipsychotic medication on brain morphology in psychoses.

**Aims** To analyze whether cumulative lifetime or current antipsychotic medication dose relates to brain morphology in schizophrenia and other psychoses at age of 43 years.

**Methods** Forty-four schizophrenia cases and 35 with other psychoses from the Northern Finland Birth Cohort 1966 were scanned on a 1.5T GE Signa scanner and brain structures were extracted using volBrain automated volumetry system (<http://volbrain.upv.es>). Data of antipsychotic medication were collected from medical records and interviews. We used linear regression model to analyze the effect of antipsychotic medication on brain volumes and used intracranial volume and onset age as covariates. We also performed additional analyses adding psychotic symptoms (PANSS Total score) as a covariate.

**Results** Higher lifetime and current dose associated to left lateral ventricle increase ( $b=0.33$ ,  $P=0.033$ ;  $b=0.307$ ,  $P=0.042$ , respectively) and right and left accumbens decrease ( $b=-0.405$ ,  $P=0.013$ ,  $b=-0.404$ ,  $P=0.010$ ;  $b=-0.302$ ,  $P=0.027$ ,  $b=-0.282$ ,  $P=0.036$ , respectively) in schizophrenia but not in other psychoses. When PANSS was added to the model, the findings remained regarding right and left accumbens, but not regarding left lateral ventricle.

**Conclusions** It seems that antipsychotic medication affects the brain in schizophrenia, but not in the heterogeneous group of other psychoses. In schizophrenia, brain changes associated to antipsychotic medication cannot be explained by illness duration or symptom severity.

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## FC74

### Association between drug-induced hyperprolactinemia related adverse events on women schizophrenia patients with DRD2 Taq1 polymorphism

J.J. Moon<sup>1</sup>, J.M. An<sup>1</sup>, J.C. Shim<sup>1</sup>, D.U. Jung<sup>1,\*</sup>, B.G. Kong<sup>1</sup>, J.W. Kang<sup>1</sup>, D.W. Jeon<sup>1</sup>, H.S. Kim<sup>2</sup>

<sup>1</sup> *Inje University Busan Paik Hospital, Psychiatry, Busan, Republic of Korea*

<sup>2</sup> *Inje University Busan Paik Hospital, Clinical Pharmacology, Busan, Republic of Korea*

\* *Corresponding author.*

**Objectives** To observe the association between adverse effects of long-term use of antipsychotic drugs in female schizophrenic patients and dopamine D2 receptor (DRD2), cytochrome P450 (CYP) 2D6, estrogen receptor- $\alpha$  gene (ESR1).

**Method** The subjects were 89 female schizophrenic patients (age range from 18 to 40) who had been taking the same medication for more than 3 months. The adverse effects with regard to hyperprolactinemia were studied through the blood collection at one point of the subjects. Furthermore, the effect of DRD2, CYP2D6, ESR1 on serum prolactin level and amenorrhea was analyzed.

**Results** There was a lower concentration of E2 in patients with amenorrhea. In addition, an inverse correlation was found between prolactin level and E2 level. Hyperprolactinemia (HPRL) was commonly found in patients who had been using risperidone, amisulpride and paliperidone; in contrast, HPRL was found less in those who had been taking aripiprazole, olanzapine, ziprasidone, clozapine and quetiapine. Moreover, female schizophrenic patients who had DRD2 Taq1 A1 allele had twice the chance of developing amenorrhea than those who did not have A1 allele. Female schizophrenic patients who had Taq1 A1 allele also had 48% higher concentration level of prolactin than those who did not have A1 allele. There was no association found between prolactin and CYP2D6 or ESR1.

**Conclusion** Female schizophrenic patients who had DRD2 Taq1 A1 allele showed high prolactin level and high-frequency of HPRL. Therefore, reducing the use of prolactin-elevating antipsychotics for female schizophrenic patients with DRD2 Taq1 A1 allele would be one method minimizing the adverse effects of drug-induced hyperprolactinemia.

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## FC75

### Affectivity during social behaviour in a schizophrenic-like rat

L. Kai<sup>1,\*</sup>, D. Gill<sup>2</sup>, G. Wegener<sup>3</sup>, A. Tasker<sup>2</sup>

<sup>1</sup> *Aarhus University, Translation Neuropsychiatry Unit, Aarhus, Denmark*

<sup>2</sup> *University of Prince Edward Island, Biomedical Department, Charlottetown, Canada*

<sup>3</sup> *Aarhus University, Translational Neuropsychiatry Unit, Aarhus, Denmark*

\* *Corresponding author.*

**Introduction** Rats are social animals that produce high-frequency whistles said to reflect their underlying affective state. Injecting rats with a glutamate agonist (domoic acid) at a sensitive period of brain development, models aspects of schizophrenia. This is known as the neonatal DOM model.

**Aims** We investigated whether DOM rats display altered social behaviour – as seen in patients with schizophrenia – using their high-frequency whistles as a proxy for the emotional valence of social situations.

**Methods** We used 19 male Sprague Dawley rats, injected with either a low-dose of domoic acid or saline at postnatal days 8 to 14. The social behaviour of the rats was investigated at four levels:

- anticipation of social interaction;
- dyadic encounter;
- three-chamber test;
- tickling.

Tests were carried out at postnatal days 34 to 40 and 50 to 56. Rat whistles were recorded on all days of testing.

**Results** In progress.

**Conclusions** The interest in rat whistles as a supplement to traditional behavioural tests has increased. New software allows for detailed qualitative analysis of the whistle subtypes and thus new complexity to their interpretation. This study can help unravel information encoded in the whistles and shed light on the social behaviour of the DOM rat thus investigating it is applicability as a model of schizophrenia.

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## FC76

### Maternal obstetric complications and intellectual functioning in patients with schizophrenia and their healthy siblings

H. Karakula-Juchnowicz<sup>1,\*</sup>, D. Juchnowicz<sup>2</sup>, P. Krukow<sup>3</sup>, J. Moryłowska-Topolska<sup>3</sup>, J. Pawezka<sup>4</sup>, M. Flis<sup>5</sup>, R. Markiewicz<sup>6</sup>, A. Urbanska<sup>4</sup>

<sup>1</sup> Medical University of Lublin, Department of Clinical Neuropsychiatry I Department of Psychiatry Psychotherapy and Early Intervention, Lublin, Poland

<sup>2</sup> University of Pedagogy of Białystok, Department of Psychology, Białystok, Poland

<sup>3</sup> Medical University of Lublin, Department of Clinical Neuropsychiatry, Lublin, Poland

<sup>4</sup> Medical University of Lublin, II Department of Psychiatry and Psychiatric Rehabilitation, Lublin, Poland

<sup>5</sup> Medical University of Lublin, I Department of Psychiatry Psychotherapy and Early Intervention, Lublin, Poland

<sup>6</sup> Medical University of Lublin, Department of Psychiatric Nursing Faculty of Nursing and Health Sciences, Lublin, Poland

\* Corresponding author.

**Objectives** Intellectual functioning in schizophrenia has been associated with genetic vulnerability and obstetric complications.

**Aims** The aim of this study was to assess:

– the incidence of complications during pregnancy, labor and delivery;

– the association of OCs with general intellectual ability in two groups: patients with schizophrenia and their healthy siblings.

**Methods** Forty-two patients with schizophrenia according to DSM-IV and 43 their healthy siblings were included in the study and examined using MINI and WAIS-R. Their mothers were interviewed to gather data on OCs. The ‘midwife protocol’ of Parnas et al. was used to quantify the presence and entity of OCs.

**Results** Asphyxia, mother’s serious illness during pregnancy, premature delivery with weight < 2500 g, labor time > 48 h, infarcts in the placenta and eclampsia were statistically more frequent in schizophrenic group. OCs were more common in individuals with a family history. The two investigated groups were different in the following WAIS-R subtests: comprehension ( $P=0.018$ ), block design ( $P=0.0001$ ), digit symbol ( $P=0.001$ ), as well as in performance IQ and total IQ. In the patient group, correlations between OCs indexes and WAIS-R results include all intelligence quotients (verbal, performance, total IQ) and 5 WAIS-R subtests, while in the sibling group: verbal and total IQ and 2 subtests. The correlation between Vocabulary subtest and OCs was the strongest in both groups.

**Conclusion** OCs may interact with genetic vulnerability to increase the risk of schizophrenia and have been associated with cognitive deficits in the patient group.

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

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## FC77

### Premorbid social adjustment is better in cannabis-using than non-using psychotic patients across Europe

L. Ferraro<sup>1,\*</sup>, V. Capuccio<sup>2</sup>, A. Mulè<sup>1</sup>, C. La Cascia<sup>1</sup>, L. Sideli<sup>1</sup>, G. Tripoli<sup>1</sup>, F. Seminerio<sup>1</sup>, C. Sartorio<sup>1</sup>, D. La Barbera<sup>1</sup>, R. Murray<sup>3</sup>, M. Di Forti<sup>4</sup>

<sup>1</sup> University of Palermo, Psychiatry, Palermo, Italy

<sup>2</sup> University of Palermo, Statistics, Palermo, Italy

<sup>3</sup> King’s College of London, Psychosis Studies, London, United Kingdom

<sup>4</sup> King’s College of London, Social, Genetic and Developmental Psychiatry, London, United Kingdom

\* Corresponding author.

**Introduction** A number of authors have hypothesized that psychotic patients who consume cannabis constitute a differentiated subgroup of patients that have better cognitive and social skills, necessary to engage in illegal drug consumption, than non-using patients.

**Objectives** Given that the prevalence, and patterns, of cannabis use are culturally driven, we wanted to study first-episode psychosis (FEP) cannabis-using and non-using patients coming from different European countries as part of the EUGEI-STUDY.

**Aims** We tested the hypothesis of better premorbid social adjustment in cannabis-using FEP patients, by comparing them to FEP non-cannabis users and to their respective healthy controls.

**Methods** A total of 1745 people (746 cases; 999 controls) completed the assessment for premorbid adjustment [Premorbid Adjustment Scale (PAS)] and cannabis use (CEQ-Revised). We first extracted the Premorbid Social Adjustment Factor (PSA) from PAS and then performed linear mixed models with PSA as dependent variable and cannabis lifetime (Yes/No) and subject status (Cases/Controls) as independent variables. We then considered ‘Country’ as random intercept.

**Results** Across all countries, PSA scores were better in patients who had smoked cannabis in their lifetime than patients who had not ( $P=0.009$ ). The difference in PSA score between cannabis users and non-users was significantly greater in cases than controls ( $P=0.038$ ). The relationship between PSA, cannabis lifetime (Yes/No) and subject status among nations (random intercept) is shown on Fig. 1.

**Conclusions** Cannabis-using psychotic patients show better premorbid social adjustment than non-using patients, across 5 European countries.

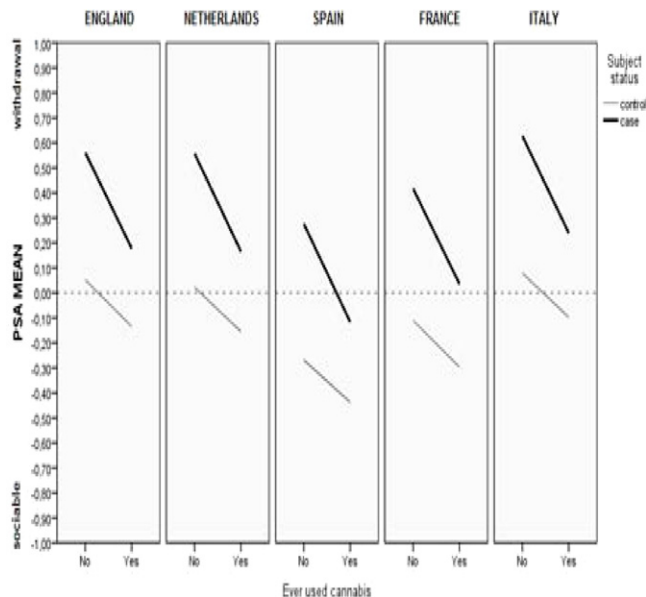


Fig. 1 PSA scores by subject status (cases/controls) and cannabis use (yes/no) across different countries.

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