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**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

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**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

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**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.