ineffective or cause side effects. Polymorphic variants of genes that code CYP450 enzymes cause differences in their activity and therefore in efficacy and safety of drugs that are metabolized by them.
Aim of the study Determine whether pharmacogenetic testing of CYP2D6, CYP2C19 and CYP2C9 polymorphism would have had influence on selected patients' treatment courses.
Methods Five patients that were diagnosed for treament-resistant mood disorders in Vilnius university hospital Santariskiu clinics centre of neurology, department of psychiatry were invited to give blood samples for genetic testing retrospectively. Patients' CYP2C19, CYP2D6 and CYP2C9 enzymes genetic polymorphism results were compared with previous empirical pharmacological treatment courses of these patients.
Results In four out of five cases significant polymorphism of CYP2C19 enzyme allele was detected. In all of these cases 1*/2* variant, that conditions intermediate metabolizer phenotype, was identified. Alterations in CYP2D6 and CYP2C19 regions were not found. In three cases the presence of varied genetic variant could have been clinically relevant. In two of these cases Sertraline and valproates, that are both metabolized by CYP2C19 enzyme, were taken by patients and side effects were observed. Unsuccessful treatment was repeated without effect, both in clinical and outpatient environment. Continuous rehospitalization took place until appropriate empirical treatments were established.
Conclusions Pharmacogenetic testing could have had influence on treatment choices for three out of five selected patients leading to less side effects and rehospitalizations.
Disclosure of interest The authors have not supplied their declaration of competing interest.

http://dx.doi.org/10.1016/j.eurpsy.2017.01.2055

EW0187

Mthfr Allele distribution in Romanian schizophrenia patients

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Introduction Currently available data on the aetiology of schizophrenia suggests a major involvement of epigenetic mechanisms. One such mechanism could be the alteration of activation and silencing of genes, which involves DNA methylation and de-methylation. The main limiting enzyme involved in the methyl-donor cycle is methylene-tetra-hydro-folate-reductase (MTHFR), and the most frequently observed mutation in the MTHFR gene, altering its activity, is the C677 T mutation.
Aim In the present study, we investigated the frequency of MTHFR C677 T mutation and total plasma homocysteine (tHcy) concentrations in a sample of Romanian schizophrenia patients as compared to healthy controls.
Methods Seventy schizophrenia patients (35% females) with a mean age of 38.8 ± 20.5 years and 50 healthy controls (50% females) with a mean age of 36.3 ± 11.6 years were included. MTHFR genotype was determined through polymerase chain reaction and tHcy levels were determined through reversed phase high-pressure liquid chromatography.
Results Schizophrenia patients, registered higher frequency of the T allele, with the CC genotype observed in 39.4% of them, as compared to a frequency of 60.6% in the control group ($P = 0.002$–Fisher's exact test). tHcy concentrations did not differ between the two groups (10.7 ± 4.2 vs. 11.2 ± 4.1, $P > 0.005$–Mann–Whitney U test).
Conclusions Romanian schizophrenia patients have a significantly higher frequency of the MTHFR C677 T mutation, but without significant effect on tHcy concentrations.
Disclosure of interest The authors have not supplied their declaration of competing interest.

http://dx.doi.org/10.1016/j.eurpsy.2017.01.2056

EW0188

Influence of 5-HTR2C polymorphisms on metabolic syndromes in Thai schizophrenia patients

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Introduction Metabolic syndrome is a significant problem in the schizophrenia patients. Previous research demonstrated that single nucleotide polymorphisms in the serotonin 2C receptor (5HTR2C) genes are associated with metabolic syndrome related to schizophrenia patients taking atypical anti-psychotic drugs. This study aimed to investigate whether the effect of 3 SNPs in 5HTR2C gene on the presence of the metabolic syndrome in Thai schizophrenia patients.
Method We conducted a cross-sectional study and 154 patients were recruited. The schizophrenia patients were identified from a diagnostic and statistical manual of mental disorders, 4th edition, (DSM-IV) and criterion and determined the metabolic syndrome according to the 2005 international diabetes federation (IDF) Asia criteria. Patients were genotyped for the 5HTR2C rs51,8147, rs126,881,02, rs128,367,71 polymorphisms.
Results The preliminary analysis from 154 patients showed the metabolic syndrome prevalence was 38.73%, with 46.50% in male and 53.48% in female patients. The results showed that the patients who have heterozygous and homozygous variant on 5HTR2C gene (rs518,147 and rs126,881,02) showed a significant difference in the presence of metabolic syndrome when compare with patients who carry homozygous wild type ($P = 0.007$), especially in male patients ($P = 0.002$). The association between 5HTR2C polymorphisms and metabolic syndrome was found in male patients but not found in female patients.
Conclusion These findings suggest that 5HTR2C genotypes are associated with the metabolic syndrome in patients taking atypical anti-psychotics. However, the metabolic syndrome results from the multigenetic effects. The further studies should focus on the other genes, which were involved in metabolic syndrome.
Disclosure of interest The authors have not supplied their declaration of competing interest.

http://dx.doi.org/10.1016/j.eurpsy.2017.01.2057

EW0189

Prevalence of the CYP2D6*10 (C100 T) polymorphism in psycho-neurological patients in North-Western and Siberian regions of the Russia

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