

## ABSTRACT

### **Analysis Association Between Single Nucleotide Polymorphism (SNP) Ser704<sup>Cys</sup> of the DISC1 Gene , Val158<sup>Met</sup> of the COMT Gene, and Oxidative Stress Level with Incidence and Clinical Symptoms of Schizophrenic Patients in Surabaya, Indonesia**

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**Introduction:** Schizophrenia is a health problem in the world, including in Indonesia and it is found in all levels of society and different geographical areas with lifetime prevalence about 1%. Mechanisms underlying schizophrenia are still not entirely clear. Factors to be implicated in schizophrenia are genetic factors, environmental factors and oxidative stress.

**Methods:** This was an analytic observational study to analyze the association between SNP Ser704<sup>Cys</sup> of DISC1 gene, Val158<sup>Met</sup> of COMT gene and F2 isoprostane level with the incidence and clinical symptoms in chronic schizophrenic patients from Javanese ethnic. Design used in this study was case-control study.

**Results:** Patients with chronic schizophrenia showed no differences in PANSS scores in all categories between mutant type and wild type in SNPs of DISC1 and COMT genes ( $p > 0,05$ ). In Javanese population the frequency of SNP Cys704<sup>Cys</sup> DISC1 gene was 6.7% (2/30) and SNP Met158<sup>Met</sup> COMT gene was also 6.7% (2/30). Catechol-O-Methyl Transferase showed the presence of mutant heterozygote C/G in the third nucleotide of codon 136 (no amino acid changes), which was at nucleotide number 21946 as much as 40% (12/30). There was also a variation in nucleotide T to A at the first nucleotide of codon 145 (sistein to serine substitution), nucleotide number 21971 as much as 3.3% (1/30). In chronic schizophrenia group, F2-isoprostane level was significantly higher than that in control group ( $p < 0,05$ ). There was no association each others between plasma F2 isoprostane, clinical symptoms, SNP Ser704<sup>Cys</sup> DISC1 and Val158<sup>Met</sup> COMT genes in chronic schizophrenia.

**Conclusions:** SNP Ser704<sup>Cys</sup> DISC1 and Val158<sup>Met</sup> COMT genes in chronic schizophrenia were found in Javanese population. Plasma F2 isoprostane in chronic schizophrenia group was higher than that in control group. Plasma F2 isoprostane, clinical symptoms, SNP Ser704<sup>Cys</sup> DISC1 and Val158<sup>Met</sup> COMT genes in chronic schizophrenia had no association between each others.

**Key word:** Schizophrenia, PANSS, SNP Ser704<sup>Cys</sup> DISC1 gene, SNP Val158<sup>Met</sup> COMT gene, F2- isoprostane.