

INTISARI

Latar Belakang : Kriminalitas di Indonesia sangat tinggi, terhitung tiap 2 menit 7 detik terjadi tindak kekerasan. Kriminalitas terjadi akibat perilaku agresif pada pelaku yang berujung pada tindakan kriminal. Perilaku agresif dipengaruhi oleh faktor dorongan sosial, lingkungan, budaya, dan faktor biologi. Serotonin dicurigai sebagai salah satu faktor diantaranya. Penelitian terdahulu menyatakan kadar serotonin yang rendah menyebabkan perilaku agresif. Dipercaya reseptor serotonin memiliki peran dalam rendahnya kadar serotonin. Salah satu reseptor serotonin yang dicurigai memiliki peran pada perilaku agresif adalah gen 5-HTR1A, diduga polimorfisme gen 5-HTR1A menyebabkan gangguan pada regulasi serotonin.

Tujuan: Mengetahui polimorfisme dan hubungan gen 5-HTR1A dengan perilaku agresif.

Metode: Jenis penelitian ini adalah analitik cross sectional. Subyek penelitian adalah warga binaan kemasyarakatan di Lembaga Pemasyarakatan di Daerah Istimewa Yogyakarta. Sampel penelitian berjumlah 84 warga binaan kemasyarakatan. Sampel kemudian dinilai perilaku agresif menggunakan BPAQ dan diambil darah vena untuk genotyping polimorfisme gen 5-HTR1A. Darah yang diambil kemudian dimasukkan ke dalam tabung EDTA, dilakukan ekstraksi dan pengukuran kadar DNA dengan menggunakan spektrofotometer. Amplifikasi DNA dilakukan dengan PCR, kemudian produk PCR dilakukan prosedur RFLP, enzim restriksi BseG I, dan elektroforesis pada gel agarose untuk mendapatkan varian rs6295 polimorfisme gen 5-HTR1A. Olah data untuk mengetahui hubungan antara perilaku agresif warga binaan kemasyarakatan dengan varian polimorfisme gene 5-HTR1A akan dilakukan uji statistik Mann-Whitney Test pada program SPSS 26.0.

Hasil: sebanyak 84 orang laki-laki warga binaan kemasyarakatan di Yogyakarta, dengan usia rata-rata 31 tahun. Didapatkan 3 tipe genotip: CC (78,6%), CG (17,9%), dan GG (3,6%). Didapatkan hubungan yang signifikan antara polimorfisme gen 5-HTR1A dengan agresif fisik dari BPAQ, dan tidak didapatkan hubungan antara polimorfisme gen 5-HTR1A dengan komponen agresif verbal, kemarahan, dan permusuhan dari BPAQ.

Kesimpulan: Polimorfisme gen 5-HTR1A didapatkan pada genotip CC (78,6%), CG (17,9%), dan GG (3,6%). Penelitian ini menunjukkan adanya hubungan antara polimorfisme gen 5-HTR1A dengan agresif fisik pada warga binaan kemasyarakatan di wilayah Yogyakarta.

Kata Kunci : 5-HTR1A, Agresif, BPAQ, Kriminalitas, Polimorfisme.

ABSTRACT

Background: Criminality in Indonesia is prevalent. Approximately, every 2 minutes and 7 seconds there is an act of violence taking place. Criminality happens because of aggressive behaviors of an individual that leads to criminal activity. Aggressive behaviors are influenced by social, environmental, cultural, and biological driving factors. Serotonin is suspected as one of the factors that play a role. Previous studies suggest that a low serotonin level results in aggressive behaviors. It is believed that serotonin receptors have a part in a low serotonin level. One of the serotonin receptors suspected of influencing this aggressive behavior is the 5-HTR1A gene, where 5-HTR1A gene polymorphism disrupts serotonin regulation.

Aim: Identify polymorphism and the relationship between the 5-HTR1A gene and aggressive behaviors.

Method: This is a cross-sectional analytic study, involving community-assisted residents at the Correctional Institution of the Special Region of Yogyakarta as the subjects. The number of samples is 84 residents, and their aggressive behaviors were then evaluated using BPAQ and their venous blood sample was taken for genotyping 5-HTR1A gene polymorphism. The blood samples taken were collected into an EDTA tube, extracted, and their DNA level was measured using a spectrophotometer. DNA amplification was performed using PCR, and the PCR product underwent RFLP procedure, BseG 1 restriction enzyme, and agarose gel electrophoresis to obtain the rs6295 variant of 5-HTR1A gene polymorphism. Data analysis was carried out to identify the relationship between the aggressive behaviors of community-assisted residents and the 5-HTR1A gene polymorphism variant, which employed the Mann-Whitney statistical test using the SPSS 26.0 program.

Result: There are 84 male community-assisted residents at the Correctional Institution in Yogyakarta, with an average age of 31 years. This study obtained 3 genotypes: CC (78.6%), CG (17.9%), and GG (3.6%). There is a significant relationship between 5-HTR1A gene polymorphism and physical aggression from BPAQ, and there is no significant relationship between 5-HTR1A gene polymorphism and the components of verbal aggression, anger, and hostility from BPAQ.

Conclusion: The polymorphism of the 5-HTR1A gene obtained genotypes CC (78.6%), CG (17.9%), and GG (3.6%). This study observed a relationship between 5-HTR1A gene polymorphism and physical aggression in community-assisted residents in Yogyakarta.

Keywords: 5-HTR1A, Aggression, BPAQ, Criminality, Polymorphism