

DISERTASI

**HUBUNGAN POLIMORFISME GEN *OPIOID RECEPTOR KAPPA I*
rs7016778 dan rs7824175, KADAR *KAPPA OPIOID RECEPTOR*,
KADAR *DYNORPHIN*, KADAR KORTISOL DENGAN
*NON SUICIDAL SELF INJURY***



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ABSTRAK

HUBUNGAN POLIMORFISME GEN *OPIOID RECEPTOR KAPPA I* rs7016778 dan rs7824175, KADAR *KAPPA OPIOID RECEPTOR*, KADAR *DYNORPHIN*, KADAR KORTISOL DENGAN *NON SUICIDAL SELF INJURY*

Rini Gusya Liza

Non Suicidal Self Injury (NSSI) merupakan masalah kesehatan remaja dan dewasa muda yang banyak menjadi perhatian pada saat ini. Tindakan NSSI diduga melibatkan sistem *reward* dopamin mesokortikal, sistem opioid endogen, serta overaktivasi sistem stres. Penelitian ini bertujuan mengetahui apakah ada hubungan polimorfisme gen *Opioid Receptor Kappa 1 (OPRK1)* rs7016778 dan rs7824175, kadar *Kappa Opioid Receptor (KOR)*, kadar *dynorphin*, kadar kortisol dengan NSSI.

Penelitian ini merupakan penelitian komparatif dengan desain *cross sectional* antara subjek yang didiagnosis NSSI sebanyak 84 orang dengan kontrol sebanyak 76 orang. Pengambilan sampel dengan teknik *purposive sampling* pada remaja dan dewasa muda yang memenuhi kriteria inklusi dan eksklusi serta mengisi *informed consent*. Diagnosis NSSI berdasarkan DSM-5 dengan menggunakan protokol wawancara NSSID dan untuk mengetahui fungsi dan perilaku NSSI menggunakan kuesioner ISAS. Polimorfisme gen *OPRK1* diperiksa dengan PCR, kadar *Kappa Opioid Receptor (KOR)* dan kadar *dynorphin* dalam plasma diukur dengan ELISA. Sedangkan kadar kortisol serum juga diukur dengan ELISA.

Hasil penelitian didapatkan usia onset gangguan NSSI yang terbanyak adalah usia 15 sampai 17 tahun. Sebagian besar responden merasakan sakit saat melakukan *self-injury*. Waktu yang paling sering untuk melakukan tindakan NSSI adalah saat sendirian, Sebagian besar melakukan lebih dari 3 metode NSSI dan yang paling sering digunakan adalah menarik rambut. Fungsi perilaku NSSI yang paling banyak adalah *affect regulation*. Kadar OPRK, kadar *dynorphin* dan kadar kortisol lebih tinggi pada subjek dengan NSSI. Frekuensi Alel A lebih tinggi pada NSSI sedangkan frekuensi Alel C lebih tinggi pada kontrol. Terdapat perbedaan kadar KOR antara subjek NSSI dengan kontrol. Terdapat hubungan kadar KOR dengan kadar *dynorphin* dengan NSSI. Tidak terdapat perbedaan Polimorfisme gen OPRK-1 rs7016778 dan rs7824175 antara subjek NSSI dengan kontrol. Tidak terdapat perbedaan kadar *dynorphin* dengan kadar kortisol antara subjek NSSI dengan kontrol.

Studi ini membuktikan adanya peranan Kappa Opioid Receptor dan dynorphin pada non suicidal self-injury. Perlu penelitian pada regulator gen OPRK-1 untuk mengetahui peran genetik pada NSSI ini.

Kata-kata kunci: Non-suicidal, self-injury, Opioid, Kappa receptor, *Dynorphin*, Polimorfisme.

ABSTRACT

ASSOCIATION BETWEEN OPIOID RECEPTOR KAPPA I rs7016778 and rs7824175 GENE POLYMORPHISM, KAPPA OPIOID RECEPTOR LEVEL, DYNORPHIN LEVEL, CORTISOL LEVEL WITH NON-SUICIDAL SELF INJURY

Rini Gusya Liza

Non-suicidal self-injury (NSSI) is a health problem for adolescents and young adults that is currently of much concern. The action of NSSI is thought to involve the mesocortical dopamine reward system, the endogenous opioid system, and overactivation of the stress system. This study aims to determine whether there is a Association between the Opioid Receptor Kappa (OPRK) 1 rs7016778 and rs7824175 gene polymorphism, Kappa Opioid Receptor (KOR) levels, dynorphin levels, cortisol levels and NSSI.

This study is a comparative study with a cross-sectional design between subjects diagnosed with NSSI as many as 84 people and controls as many as 76 people. Sampling using purposive sampling technique in adolescents and young adults who meet the inclusion and exclusion criteria and fill out informed consent. The diagnosis of NSSI is based on DSM-5 using the NSSID interview protocol and to determine the function and behavior of NSSI using the ISAS questionnaire. OPRK1 gene polymorphism was examined by PCR, Kappa Opioid Receptor (KOR) levels and Dynorphin levels in plasma were measured by ELISA. While serum cortisol levels were also measured by ELISA.

The research results showed that the highest age of onset for NSSI disorders was 15 to 17 years. Most respondents felt pain when committing self-injury. The most frequent time to engage in NSSI is when alone. Most do more than 3 NSSI methods and the one most frequently used is hair pulling. The most common function of NSSI behavior is affect regulation. KOR levels, dynorphin levels and cortisol levels were higher in subjects with NSSI. The frequency of Allele A is higher in NSSI while the frequency of Allele C is higher in controls. There were differences in KOR levels between NSSI subjects and controls. There is a relationship between KOR levels and dynorphin levels with NSSI. There was no difference in the OPRK1 gene polymorphism rs7016778 and rs7824175 between NSSI subjects and controls. There was no difference in dynorphin levels and cortisol levels between NSSI subjects and controls.

This study proves the role of Kappa Opioid Receptor and dynorphin in non-suicidal self-injury. Research on the OPRK-1 gene regulator is needed to determine the genetic role in NSSI.

Keywords: Non-suicidal, self-injury, Opioid, Kappa receptor, Dynorphin, Polymorphism