

INTISARI

Latar Belakang: Zat alkohol terbanyak disalahgunakan di dunia dan salah satu faktor gangguan fungsi hati melalui sifat polimorfisme gen enzim ADH2. Sedikitnya penelitian hubungan polimorfisme gen ADH2 dengan status fungsi hati, mendorong penulis meneliti hal ini pada populasi yang banyak mengonsumsi alkohol di Indonesia, yaitu etnis Nusa Tenggara Timur (NTT).

Tujuan: Penelitian bertujuan menganalisa polimorfisme gen ADH2 dengan kerusakan fungsi hati dihubungkan perilaku minum alkohol pada Etnis NTT.

Metode: Sebanyak 60 responden etnis NTT memenuhi kriteria inklusi dilibatkan dalam penelitian, setelah responden menandatangani *inform consent* diwawancara dan diambil sampel darahnya, sampel darah kemudian dilakukan isolasi DNA, pemeriksaan kadar DNA, elektroforesis, RFLP, penentuan polimorfisme menggunakan enzim MaeIII, dan pemeriksaan fungsi hati (SGOT, SGPT, dan GGT). Perilaku minum berdasarkan rutinitas, frekuensi, volume, dan durasi menggunakan kuesioner. Analisis statistik menggunakan *chi square* lalu dilakukan uji korelasi, dan menghitung ODDS Ratio.

Hasil: Dari 60 subyek penelitian, *genotype* ADH2*1 dimiliki 1 subyek (1,7%), ADH2*2 oleh 39 subyek (65%), dan ADH2*3 oleh 20 subyek (33,3%). Responden peminum alkohol 44 orang (73,3%), sedangkan bukan peminum alkohol 16 orang (26,7%). Subyek ADH2*3 berisiko terjadinya peningkatan SGOT sebesar 2,00 kali (OR=2,00), peningkatan SGPT sebesar 2,12 kali (OR=2,12), dan peningkatan GGT sebesar 6,71 kali (OR=6,71). Tidak terdapat proporsi bermakna antara polimorfisme gen *ADH2* dengan perilaku minum minuman beralkohol ($p=0,272$), maupun tingkat konsumsi alkohol pada populasi peminum alkohol ($p=0,296$).

Kesimpulan: Polimorfisme gen *ADH2* adalah ADH2*1, ADH2*2 dan ADH2*3, dengan ADH2*2 (65%) terbanyak etnis NTT. Gen tersebut secara statistik tidak terdapat proporsi yang bermakna terhadap kadar SGOT, SGPT, GGT, perilaku minum alkohol, dan tingkat konsumsi alkohol pada populasi etnis NTT. Subyek ADH2*2 peminum alkohol berisiko terjadinya peningkatan SGPT sebesar 0,15 kali (OR=0,15) dan subyek ADH2*3 berisiko terjadinya peningkatan GGT sebesar 1,08 kali (OR=1,08).

Kata Kunci: Intoksikasi Alkohol, ADH2, Polimorfisme, Fungsi Liver, etnis NTT.

ABSTRACT

Background: Most alcoholic substances are misused in the world and one of the factors for liver dysfunction is through the polymorphism of the ADH2 enzyme gene. The small number of studies on the proportion of ADH2 gene polymorphisms with liver function status prompted the authors to examine this in a population that consumes a lot of alcohol in Indonesia, namely the ethnic East Nusa Tenggara (NTT).

Purpose: The aim of this study was to analyze the polymorphisms of the ADH2 gene with impaired liver function associated with drinking alcohol behavior among ethnic NTTs.

Method: A total of 60 NTT ethnic respondents who met the inclusion criteria were involved in the study, after the respondents signed the informed consent to the interview and their blood samples were taken, the blood samples were then carried out DNA isolation, examination of DNA levels, electrophoresis, RFLP, determination of polymorphism using the MaeIII enzyme, and liver function tests. (SGOT, SGPT, and GGT). Drinking behavior based on routine, frequency, volume, and duration using a questionnaire. Statistical analysis using chi square then performed a correlation test, and calculating the ODDS Ratio.

Results: From 60 study subjects, genotype ADH2*1 was owned by 1 subject (1.7%), ADH2*2 by 39 subjects (65%), and ADH2*3 by 20 subjects (33.3%). Respondents who drink alcohol are 44 people (73.3%), while 16 people are not alcohol drinkers (26.7%). ADH2*3 subjects had the risk of an increase in SGOT by 2.00 times (OR=2.00), an increase in SGPT by 2.12 times (OR=2.12), and an increase in GGT by 6.71 times (OR=6.71 times). There was no significant proportion between the ADH2 gene polymorphism with alcoholic drinking behavior ($p=0.272$), or the level of alcohol consumption in the alcohol drinking population ($p=0.296$).

Conclusions: ADH2 gene polymorphisms, namely ADH2*1, ADH2*2 and ADH2*3, with ADH2*2 (65%) the highest number of ethnic groups in NTT. This gene was statistically not a significant proportion of the levels of SGOT, SGPT, GGT, alcohol drinking behavior, and the level of alcohol consumption in the NTT ethnic population. ADH2*2 subjects who drank alcohol had a risk of an increase in SGPT by 0.15 times (OR=0.15) and ADH2*3 subjects had a risk of an increase in GGT by 1.08 times (OR=1.08).

Keyword: Alcohol Intoxication, ADH2, Polymorphism, Liver Function, ethnic NTT.