

INTISARI

Latar Belakang: Polimorfisme gen *ALDH2* berhubungan dengan akumulasi asetaldehida dalam darah yang dapat memengaruhi perilaku konsumsi minuman beralkohol. NTT merupakan provinsi di Indonesia dengan tingkat konsumsi alkohol terbesar nomor dua dan konsumsi minuman beralkohol yang berlebihan yang tertinggi. Konsumsi alkohol kronis berhubungan dengan berbagai penyakit, tetapi hubungannya dengan fungsi ginjal masih belum diketahui dengan pasti.

Tujuan: Mengetahui hubungan polimorfisme gen *ALDH2* dengan status fungsi ginjal pada peminum alkohol etnis NTT

Metode: Menggunakan rancangan potong lintang, dengan subjek penelitian etnis NTT berusia 18-60 tahun. Subjek diwawancarai untuk mendapatkan identitas, data demografi, serta kebiasaan minum alkohol dan merokok. Dilakukan pengukuran berat badan, tinggi badan, dan tekanan darah. Sampel darah diambil melalui vena, untuk dilakukan pemeriksaan DNA dengan PCR-RFLP, kadar kreatinin dan ureum dengan *chemistry analyzer*, kemudian eGFR dihitung dari kreatinin dengan rumus CKD-EPI. Data yang didapatkan dianalisis dengan uji *chi-square*, serta dilanjutkan dengan analisis multivariat berupa regresi logistik multinomial.

Hasil: Sebanyak 51 orang etnis NTT, dengan usia rata-rata $26,33 \pm 1,33$ tahun, terdiri atas 37 orang (72,5%) peminum alkohol, yang 19 orang (37,3%) di antaranya merupakan peminum berat. Didapatkan 3 tipe genotip: *ALDH2*1* (52,9%), *ALDH2*1/2*2* (13,7%), dan *ALDH2*2* (33,3%). Tidak didapatkan hubungan yang signifikan antara polimorfisme gen *ALDH2* dengan status fungsi ginjal maupun kebiasaan minum alkohol ($p > 0,05$), juga setelah disesuaikan dengan analisis multivariat.

Kesimpulan: Polimorfisme gen *ALDH2* didapatkan pada 47,05% subjek. Penelitian ini tidak menunjukkan adanya hubungan polimorfisme gen *ALDH2* dengan status fungsi ginjal pada peminum alkohol etnis NTT.

Kata kunci: alkohol, etnis Nusa Tenggara Timur, fungsi ginjal, gen *ALDH2*

ABSTRACT

Background: Genetic polymorphism of *ALDH2* has been linked with acetaldehyde accumulation, which results in alcohol-drinking behavior. East Nusa Tenggara is a province in Indonesia with the second-highest alcohol drinking rate and the highest rate of heavy alcohol drinking. Some organ dysfunction is attributed to chronic alcohol consumption, however, its effect on kidney function is inconclusive.

Objective: To identify the relationship between genetic polymorphism of *ALDH2* and kidney function status among alcohol drinkers in East Nusa Tenggara.

Methods: Using a cross-sectional design, the subjects of this study were the East Nusa Tenggara ethnic population, aged 18-60 years old. Interviews were conducted to obtain identity, demographic data, drinking behavior, and smoking habit. Body height, body weight, and blood pressure were measured. Blood samples were derived from vein puncture to conduct DNA analysis with PCR-RFLP, creatinine and BUN level with chemistry analyzer, and afterward, eGFR was calculated with CKD-EPI equation. Data were analyzed with the chi-square test, and multivariate analysis using multinomial logistic regression.

Results: A total of 51 people of East Nusa Tenggara ethnicity, mean age 26.33 ± 1.33 years, consists of 37 (72.5%) alcohol drinkers, of which 19 (37.3%) of them were heavy alcohol drinkers. There were 3 types of genotypes: *ALDH2*1* (52.9%), *ALDH2*1/2*2* (13.7%), and *ALDH2*2* (33.3%). There was no significant association between genetic polymorphism of *ALDH2* and kidney function status, nor alcohol drinking behavior ($p > 0.05$), even after adjusted with multivariate analysis.

Conclusions: Genetic polymorphism of *ALDH2* was found in 47.05% of subjects. This study indicated no relationship between genetic polymorphism of *ALDH2* and kidney function status among alcohol drinkers in East Nusa Tenggara.

Keywords: alcohol, *ALDH2* gene, East Nusa Tenggara ethnicity, kidney function