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TP53 ARG72PRO G>C POLYMORHISMS; A RISK STUDY FOR EARLY ONSET BREAST CANCER IN YOGYAKARTA POPULATION
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ABSTRACT

Background: Early onset breast cancer has worse prognosis. The risk factors are environmental and genetic factors. In recent studies, polymorphism of *p53* at codon 72 encoding proline or arginine, has drawn attention as a genetic factor associated with cancer risk. However the association between ethnic differences especially Indonesian and the polymorphism toward early onset of breast cancer in Indonesia is still unknown. In the current case-control study, we examined whether this polymorphism is associated with the early breast cancer in Indonesia population.
Study Objectives: To study the proportion and determine the relation of genotype variation of *p53* Arg72Pro in Yogyakarta breast cancer patients and the onset of the breast cancer.
Method: A case control study using 206 blood samples collected from patients admitted at Dr. Sardjito Hospital in the year 2006-2012 which consist patients <40 years and >55 years. Polymorphism *p53* Arg72Pro was analyzed by PCR-RFLP. The data was statistically analyzed chi-square, odd ratio, z test one tailed and two tailed.
Result: The distribution of three genotypes, Arg/Arg, Arg/Pro and Pro/Pro, observed in the breast cancer were 29.6%, 48.5%, and 21.8% respectively. Comparison with other population analysis showed similarity with Pacific Rim and Han Chinese population. Chi-square, Z test and Odds ratio showed insignificant results.
Conclusion: The most frequent genotype observed in Yogyakarta female breast cancer patients is Arg/Pro then followed by Arg/Arg and Pro/Pro There was no association of *TP53* arg72pro polymorphism with early onset breast cancer.

Keyword: *TP53*, Arg72Pro, rs1042522, early onset breast cancer, breast cancer.

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POLIMORFISME *TP53* ARG72PRO; STUDI FAKTOR RESIKO KANKER PAYUDARA ONSET DINI DI YOGYAKARTA

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INTISARI

Latar Belakang: Kanker payudara onset dini sendiri memiliki prognosis yang lebih buruk. Onset dini tersebut bisa dikarenakan oleh faktor lingkungan dan genetik. Polimorfisme *P53* Arg72Pro merupakan salah satu faktor kerentanan genetik. Namun gen *P53* memiliki perbedaan sesuai etnik dan asosiasi antara gen *P53* terhadap populasi di Indonesia masih belom diketahui.
Tujuan: Mengetahui proporsi dan hubungan variasi genetik *TP53* Arg72Pro pada usia penderita kanker payudara di Yogyakarta.
Metode: Studi ini merupakan sebuah kasus-kontrol dengan menggunakan darah pasien kanker payudara teregistrasi di Rumah Sakit Dr. Sardjito berusia <40 dan > 55 tahun pada tahun 2006-2012 yang dianalisis dengan PCR-RFLP. Data yang terkumpul dianalisis secara statistic menggunakan chi square, odd ratio, z test satu ekor and dua ekor.
Hasil: Proporsi distribusi genotip yang telah diobservasi dari Arg/Arg, Arg/Pro dan Pro/Pro, adalah 29.6%, 48.5%, and 21.8% secara berurutan. Perbandingan dengan populasi berbeda telah menunjukan persamaan dengan populasi *Pacific Rim* dan populasi *Han Chinese*. Analisa statistik dari *chi square, odds ratio* dan *z test* satu ekor menunjukan hasil yang tidak signifikan.
Kesimpulan: Genotip yang paling sering muncul di pasien kanker payudara Yogyakarta adalah Arg/Pro kemudian Arg/Arg dan diikuti oleh genotip Pro/Pro. Tidak ditemukan asosiasi signifikan antara polimorfisme *P53* Arg72Pro dengan onset dini kanker payudara.

Kata Kunci: *TP53*, Arg72Pro, rs1042522, kanker payudara, kanker payudara onset dini.