DISERTASI

HUBUNGAN POLIMORFISME GEN *ESTROGEN RECEPTOR 1* DENGAN

PARAMETER PATOLOGIK KARSINOMA PAYUDARA RESEPTOR

ESTROGEN POSITIF

HALAMAN COVER

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HUBUNGAN POLIMORFISME GEN *ESTROGEN RECEPTOR 1* DENGAN PARAMETER PATOLOGIK KARSINOMA PAYUDARA RESEPTOR ESTROGEN POSITIF

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Abstrak

Karsinoma payudara merupakan masalah dalam bidang kesehatan karena insiden yang meningkat setiap tahun dan merupakan penyebab utama kematian akibat kanker. Estrogen bekerja berikatan dengan Estrogen Reseptor dan berperan pada regulasi dan diferensiasi pada proses tumorigenesis payudara. Gen ESR1 telah diidentifikasi berperan dalam berbagai proses tersebut. Dijumpainya polimorfisme gen ESR1di Indonesia diharapkan bisa memberi informasi genetik bagi penanganan lebih lanjut karsinoma payudara di Indonesia

Penelitian ini merupakan penelitian deskriptif analitik dengan rancangan penelitian *cross sectional* pada pasien karsinoma payudara yang terdiagnosa dengan status hormonal ER positif. Isolasi DNA dilakukan di Laboratorium Biomedik Fakultas Kedokteran Universitas Andalas, dilanjutkan pemeriksaan RT-PCR an HRM di Laboratorium Tehnologi Pertanian Fakultas Pertanian Universitas Andalas, dan sequencing dilakukan di Laboratorium 1st BASE, di Seri Kembangan, Selangor, Malaysia.

Pemeriksaan dilakukan pada 75 sampel. Sebanyak 65 sampel dijumpai amplifikasi pada pemeriksaan RT PCR, selanjutnya dianalisis secara HRM dan dilakukan sequencing. Dari hasil *squencing* tersebut didapatkan *wild type* sebanyak 33 sampel (50,8%) dan sisanya kelompok dengan adanya perubahan pada susunan basa (*mutant type*) sebanyak 32 (49,2%). Usia pasien yang dijumpai amplifikasi dalam penelitian ini termuda adalah 38 tahun dan yang tertua adalah 78 tahun, rerata usia pada saat diagnosis adalah 55 tahun. Hasil uji *Chi Square* tidak menunjukan adanya hubungan yang signifikan antara polimorfisme gen ESR1 rs3798577 dengan usia, dengan imunoekpresi kuantitatif ER, dengan imunoekspresi PR, imunoekspresi HER-2 , invasi limfovaskular , tipe histologi, sedang dengan uji Fisher Exact tidak adanya hubungan bermakna antara polimorfisme gen ESR1 rs3798577 dengan derajat histologi, tetapi dengan uji

Fisher Exact ditunjukkan adanya hubungan yang bermakna antara polimorfisme gen ESR1 rs3798577 dengan imunoekpresi indeks proliferasi ki67.

Mengingat peran potensial status ER dalam diagnostik klinis kanker payudara, maka sangat beralasan bila di Indonesia Penelitian Hubungan Polimorfisme Gen *Estrogen Receptor 1* Dengan Parameter Patologik Karsinoma Payudara Reseptor Estrogen Positif diharapkan akan menjadi penelitian awal bagi informasi prognostik dan prediktif kanker payudara di masa depan, dengan beberapa penelitian lanjutan yang akan dilakukan

Kata kunci : ESR1, polimorfisme, karsinoma payudara, reseptor estrogen

CORRELATION BETWEEN ESTROGEN RECEPTOR 1 GENE POLYMORPHISM AND PATHOLOGICAL PARAMETERS IN POSITIVE ESTROGEN RECEPTOR BREAST CARCINOMA

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Abstract

Breast carcinoma is a problem in the health field because the incidence is increasing every year and is the leading cause of death from cancer. Estrogen acts to bind to Estrogen Receptors and plays a role in the regulation and differentiation of the breast tumorigenesis process. The ESR1 gene has been identified to play a role in these processes. The discovery of ESR1 gene polymorphism in Indonesia is expected to provide genetic information for further treatment of breast carcinoma in Indonesia

This study is an analytical descriptive study with a cross-sectional research design on breast carcinoma patients diagnosed with ER positive hormonal status. DNA isolation was carried out at the Biomedical Laboratory of the Faculty of Medicine, Andalas University, followed by RT-PCR and HRM examination at the Agricultural Technology Laboratory, Faculty of Agriculture, Andalas University, and sequencing was carried out at the 1st BASE Laboratory, in Seri Kembangan, Selangor, Malaysia.

The examination was carried out on 75 samples. A total of 65 samples were found with amplification in the RT PCR examination, then were analyzed by HRM and the sequencing was carried out. From the results of the sequencing, 33 wild type samples (50.8%) were obtained and the rest of the groups with changes in the alkaline arrangement (mutant type) as many as 32 (49.2%). The age of the patients who were found with amplification in this study was the youngest was 38 years old and the oldest was 78 years old, the average age at the time of diagnosis was 55 years. The results of the Chi Square test did not show any significant corellation between the polymorphism of the ESR1 gene rs3798577 with age, with the quantitative immunoexpression of ER, with the immunoexpression of PR, immunoexpression of HER-2, lymphovascular invasion, histology type, while with the Fisher Exact test there was no meaningful corellation between the polymorphism of the ESR1 gene rs3798577 with the degree of histology, but with

the Fisher Exact test, a significant corellation was shown between the polymorphism of the ESR1 gene rs3798577 and the immunoexpression of the proliferation index of ki67.

Given the potential role of the ER status in the clinical diagnostics of breast cancer, it is very reasonable that in Indonesia the Research on the Correlation Between Estrogen Receptor 1 Gene Polymorphism And Pathological Parameters In Positive Estrogen Receptor Breast Carcinoma is expected to be a preliminary research for prognostic and predictive information on breast cancer in the future, with some further research to be carried out.
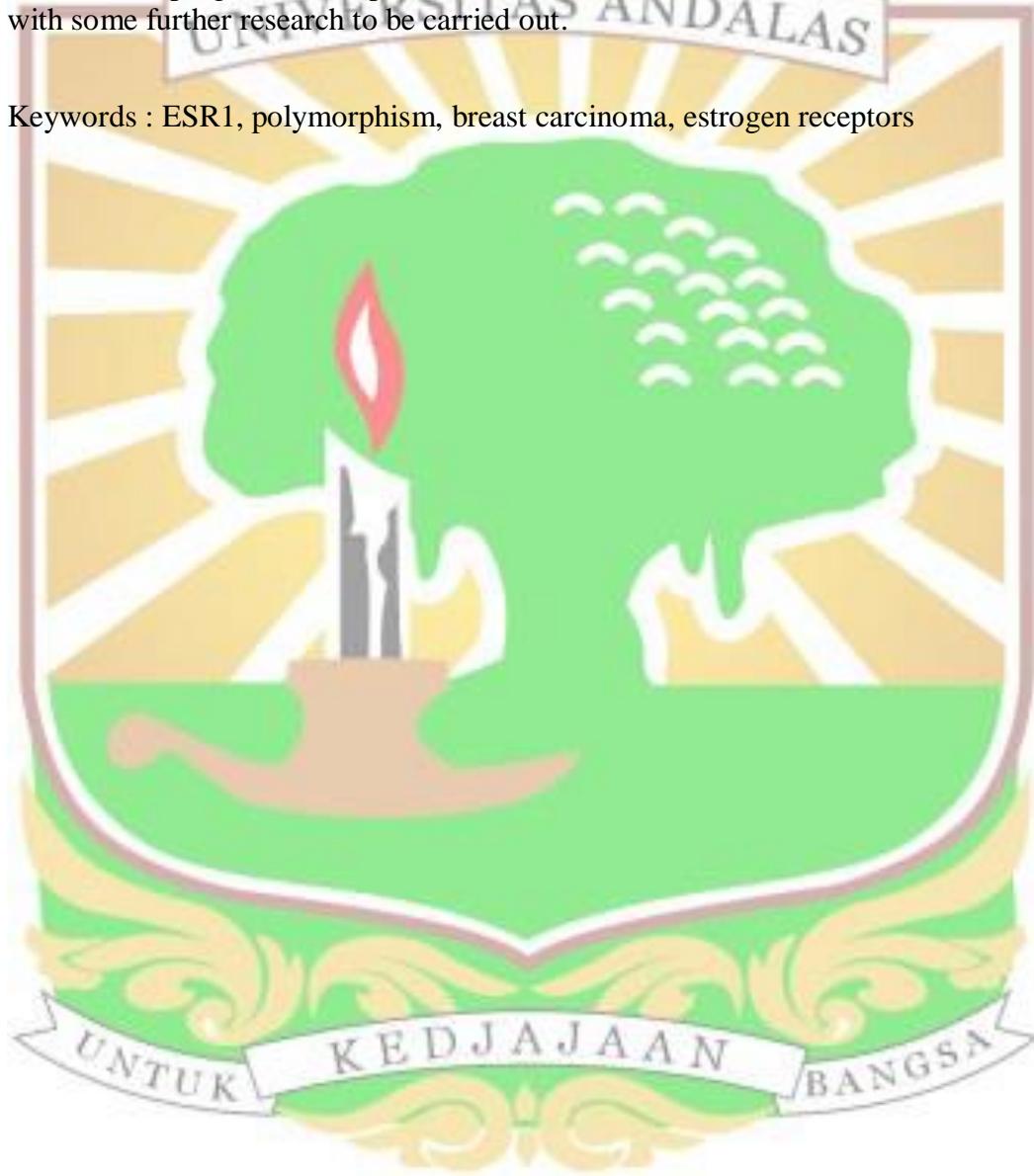
Keywords : ESR1, polymorphism, breast carcinoma, estrogen receptors