HUBUNGAN EKSPRESI ESTROGEN (ER) DAN PROGESTERON (PR) TERHADAP *TUMOR INFILTRATING LYMPHOCYTES* (TILs) PADA PASIEN *CARCINOMA MAMMAE* SUBTIPE LUMINAL A DI RSUD PROF. DR. MARGONO SOEKARJO PURWOKERTO

ABSTRAK

Latar belakang: *Carcinoma mammae* merupakan keganasan pada jaringan payudara dan menjadi keganasan paling sering ditemukan pada perempuan. Subtipe luminal A merupakan subtipe yang paling banyak dijumpai dan memiliki prognosis paling baik, ditandai dengan ekspresi reseptor estrogen dan progesteron positif serta indeks proliferasi rendah. Selain faktor hormonal, komponen imunologis seperti *Tumor Infiltrating Lymphocytes* (TILs) berperan dalam mikro lingkungan tumor dan respons terapi, namun hubungan antara ekspresi reseptor hormonal dan densitas TILs pada *Carcinoma mammae* subtipe luminal A masih belum banyak diteliti, khususnya di Indonesia.
Tujuan: Mengetahui hubungan antara ekspresi reseptor estrogen (ER) dan reseptor progesteron (PR) dengan densitas *Tumor Infiltrating Lymphocytes* (TILs) pada pasien *Carcinoma mammae* subtipe luminal A di RSUD Prof. Dr. Margono Soekarjo Purwokerto.
Metodologi: Penelitian ini menggunakan desain cross-sectional dengan total sampling terhadap pasien *Carcinoma mammae* dari data rekam medis pasien periode 2023–2024. Data meliputi hasil pemeriksaan imunohistokimia ER dan PR serta penilaian densitas TILs pada preparat histopatologi hematoksilin-eosin. Analisis hubungan dilakukan menggunakan uji Chi-Square dengan tingkat signifikansi $p < 0,05$.
Hasil: Sebanyak 60 sampel memenuhi kriteria inklusi. Mayoritas pasien memiliki ekspresi ER tinggi (> 10%**)** dan ekspresi PR tinggi (≥20%) Densitas TILs paling banyak ditemukan pada kategori sedang. Hasil analisis menunjukkan tidak terdapat hubungan yang bermakna antara ekspresi ER dengan densitas TILs maupun antara ekspresi PR dengan densitas TILs.
Kesimpulan: Tidak terdapat hubungan yang signifikan antara ekspresi reseptor estrogen dan progesteron dengan densitas TILs pada *Carcinoma mammae* subtipe luminal A, yang menunjukkan bahwa jalur hormonal dan respons imun tumor tidak selalu berkorelasi secara langsung pada subtipe ini.

Kata kunci: *Estrogen Receptor*, *Carcinoma mammae*, *Luminal A*, *Progesterone Receptor*, *Tumor Infiltrating Lymphocytes*

THE RELATIONSHIP BETWEEN ESTROGEN RECEPTOR (ER) AND PROGESTERONE RECEPTOR (PR) EXPRESSION WITH TUMOR INFILTRATING LYMPHOCYTES (TILs) IN LUMINAL A BREAST CARCINOMA PATIENTS RSUD PROF. DR. MARGONO SOEKARJO PURWOKERTO

ABSTRACT

Background: Breast carcinoma is a malignant disease of breast tissue and represents the most common cancer among women. Luminal A is the most frequently encountered subtype and has the most favorable prognosis, characterized by ekspresion of estrogen and progesterone receptor and a low proliferative index. In addition to hormonal factors, immunological components such as *Tumor Infiltrating Lymphocytes* (TILs) play an important role in the tumor microenvironment and therapeutic response. However, the relationship between the esterogen of hormonal receptor and TILs density in luminal A breast carcinoma remains insufficiently studied, particularly in Indonesia.

Objective: This study aimed to determine the relationship between estrogen receptor (ER) and progesterone receptor (PR) expression and the density of *Tumor Infiltrating Lymphocytes* (TILs) in patients with luminal A subtype breast carcinoma at RSUD Prof. Dr. Margono Soekarjo Purwokerto.

Methods: This study used a cross-sectional design with total sampling of breast carcinoma patients based on medical record data from the 2023–2024 period. Data included immunohistochemical examination results of ER and PR as well as TILs density assessed on hematoxylin-eosin stained histopathological slides. The association between variables was analyzed using the Chi-Square test with a significance level of $p < 0.05$.

Results: A total of 60 samples meet the inclusion criteria. Most patients show high ER expression (>10%) and high PR expression (≥20%). Moderate TILs density is the most frequently observed category. Statistical analysis shows no significant association between ER expression and TILs density or between PR expression and TILs density.

Conclusion: There is no significant relationship between estrogen and progesterone receptor expression and TILs density in luminal A breast carcinoma, indicating that hormonal pathways and tumor immune responses do not always directly correlate in this subtype.

Keywords: Estrogen Receptor, Luminal A, Progesterone Receptor, *Tumor Infiltrating Lymphocytes*, Breast Carcinoma