

Perbandingan circulating tumor cell sebelum dan setelah kemoterapi pada pasien kanker payudara stadium lokal lanjut dan lanjut serta faktor yang memengaruhinya = Comparison of circulating tumor cells (CTC) before and after chemotherapy for locally advanced or advanced breast cancer patients and its influencing factors

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Abstrak

Latar belakang: CTC sebagai bagian dari liquid biopsy berperan dalam melakukan monitoring pasien kanker payudara yang menjalani terapi. Adanya CTC menjadi pertanda resistensi terapi dan memengaruhi prognosis pasien. Penelitian ini bertujuan melihat adakah perubahan nilai CTC pada pasien kanker payudara stadium lokal lanjut atau lanjut yang mendapatkan kemoterapi serta melihat perubahan nilai CTC tersebut apakah dipengaruhi oleh usia, status menopause, subtype, metastasis, dan grade.

Metode: Didapatkan 30 sampel pasien kanker payudara stadium lokal lanjut atau lanjut yang akan mendapatkan kemoterapi berbasis Anthracycline dan Taxan. Pre kemoterapi pasien diambil darah perifer dan dilakukan pemeriksaan CTC menggunakan flowcytometry dengan antibodi EpCAM. Pasien lalu menjalani siklus kemoterapi hingga lengkap. Setelah itu pasien kembali diambil darah perifer dan diperiksa nilai CTC post kemoterapi.

Hasil: Dari ke 30 sampel, didapatkan mean usia 47,93+7.30. Sebanyak 56,7 (n=17) belum menopause, 43,3% status tumor T3 dan T4, status kelenjar getah bening terbanyak adalah N0 dan N1 (43,3%). Hanya 2 pasien yang ditemukan ada metastasis. 56,7% pasien dengan grade 3, dan subtype terbanyak adalah luminal B (63,4%, n=19). Terdapat 22 pasien (73,3%) dengan ER positif, 14 pasien (46,7%) dengan PR positif. Terdapat 11 pasien (36,7%) dengan Her2 positif dan 21 pasien (70%) dengan Ki67 high proliferation. Hasil CTC pre kemoterapi didapatkan nilai median 1460,50 sedangkan CTC post kemoterapi didapatkan nilai median 415,50 dilakukan uji Wilcoxon dan perbedaan bermakna dengan nilai p=0,002. Analisis multivariat regresi linier dihubungkan antara penurunan nilai CTC terhadap usia, status menopause, subtype, metastasis, dan grading didapatkan status menopause berhubungan bermakna terhadap perubahan nilai CTC (p<0,05). Kesimpulan: CTC pada pasien kanker payudara stadium lokal lanjut dan lanjut setelah kemoterapi lebih rendah bermakna dibandingkan sebelum kemoterapi. Status menopause memiliki hubungan bermakna terhadap penurunan jumlah CTC setelah kemoterapi pada kanker payudara stadium lokal lanjut dan lanjut.....

Background: As part of liquid biopsy, CTCs play a role in monitoring breast cancer patients undergoing therapy. The existence of CTCs is a sign of therapy resistance and affects patient prognosis. This study aims to examine whether there are changes in CTC values in patients with locally advanced or advanced breast cancer, who receive chemotherapy and are influenced by age, menopause status, subtype, metastasis, and grade.

Method: Of the 30 samples of locally advanced or advanced breast cancer patients receiving Anthracycline and Taxan-based chemotherapy were obtained. Pre-chemotherapy, peripheral blood, was drawn and CTCs were examined using flow cytometry with EpCAM antibody. Patients then undergo a complete chemotherapy cycle. After that, the patients were again taken peripheral blood and examined for post-

chemotherapy CTC values.

Result: The study was conducted at Cipto Mangunkusumo Hospital, started from December 2022 to December 2023. Of the 30 samples with the mean age was $47,93 \pm 7,30$. A total of 56,7 (n=17) were not menopause, 43,3% of tumor status with the T3 and T4, and the most common lymph node status with the N0 and N1 (43,3%). Only two patients were found to have metastasis. Then, 56,7% of patients had grade 3, and the most common subtype was luminal B (63,4%, n=19). There were 22 patients (73,3%) with ER positive, 14 patients (46,7%) with PR positive, 11 patients (36,7%) with Her2 positive, and 21 patients (70%) with Ki67 high proliferation. Pre-chemotherapy CTC results obtained a median value of 1460.50, Meanwhile, post-chemotherapy CTC obtained a median value of 415,50. Wilcoxon test was performed and the difference was significant with a value of $p = 0,002$. Multivariate linear regression analysis was correlated between the decrease in CTC values with age, menopause status, subtype, metastasis, and grading. The menopausal status has a significant association with decrease CTC values ($p < 0,05$).

Conclusion: CTC in locally advanced and advanced breast cancer patients after chemotherapy was significantly lower than before chemotherapy. menopause status has a significant association with decreased CTC values after chemotherapy in locally advanced and advanced breast cancer.