

INTISARI

HUBUNGAN KADAR N-TERMINAL PRO BRAIN NATRIURETIC PEPTIDE (NT-proBNP) DENGAN FRAKSI EJEKSI VENTRIKEL KIRI PADA PASIEN KANKER PAYUDARA YANG MENDAPAT KEMOTERAPI BERBASIS ANTRASIKLIN DI RSUP DR. SARDJITO

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Latar Belakang: Kemoterapi kanker payudara berbasis antrasiklin memiliki efek toksik pada jantung atau kardiotoksitas yang mempengaruhi kelangsungan hidup pasien kanker payudara. Penurunan FEVK kurang sensitif untuk mendeteksi kardiotoksitas subklinis. NT-proBNP diketahui sebagai penanda biokimiawi gagal jantung, saat ini banyak diteliti sebagai alternatif untuk menilai efek toksik antrasiklin terhadap jantung namun hasilnya masih bervariasi.

Tujuan: Menilai hubungan perubahan kadar NT-proBNP dengan perubahan FEVK pada pasien kanker payudara setelah selesai mendapat kemoterapi berbasis antrasiklin di RSUP dr.Sardjito

Metode: Penelitian observasional *cross sectional* dilakukan pada bulan Mei - November 2022. Data diambil dari registri klinis dan rekam medis pasien kanker payudara yang terdiagnosis sejak tahun 2018 - 2020 yang memenuhi kriteria inklusi dan eksklusi. Pengambilan sampel dengan metode *consecutive sampling*. Hubungan antara perubahan kadar NT-proBNP dengan FEVK dianalisa dengan uji korelasi Pearson jika data terdistribusi normal atau uji korelasi Spearman jika data tidak terdistribusi normal.

Hasil Penelitian: Sebanyak 47 pasien kanker payudara dengan rerata usia 52.74 ± 8.30 tahun. Terdapat penurunan FEVK yang signifikan antara sebelum dan setelah selesai kemoterapi (71.17 ± 5.98 % menjadi 68.72 ± 6.77 %, $p=0.003$). Sementara kadar NT-proBNP tidak meningkat secara signifikan setelah kemoterapi ($65.80 (10.00 - 483.6)$ pg/mL menjadi $70.70 (9.30 - 1370)$ pg/mL, $p=0.452$). Terdapat hubungan negatif yang lemah namun tidak signifikan antara perubahan kadar NT-proBNP dengan penurunan FEVK setelah kemoterapi antrasiklin ($r = -0.148$, $p=0.322$). Faktor usia, dosis kumulatif antrasiklin, DM, hipertensi, stadium klinis kanker, indeks massa tubuh, kombinasi kemoterapi dengan taxan juga tidak berhubungan signifikan dengan penurunan FEVK setelah kemoterapi.

Kesimpulan: Tidak dijumpai hubungan yang bermakna antara perubahan kadar NT-proBNP dengan penurunan FEVK yang diukur setelah selesai kemoterapi berbasis antrasiklin pada pasien kanker payudara di RSUP dr. Sardjito.

Kata kunci: kanker payudara, antrasiklin, NT-proBNP, fraksi ejeksi ventrikel kiri, kardiotoksitas

ABSTRACT

ASSOCIATION BETWEEN N-TERMINAL PRO BRAIN NATRIURETIC PEPTIDE (NT-proBNP) LEVELS AND LEFT VENTRICLE EJECTION FRACTION IN BREAST CANCER PATIENTS RECEIVING ANTHRACYCLINE-BASED CHEMOTHERAPY AT DR. SARDJITO HOSPITAL

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Background : Anthracycline-based breast cancer chemotherapy has a toxic effect on the heart or cardiotoxicity that affects the survival of breast cancer patients. Decreased LVEF is less sensitive for detecting subclinical cardiotoxicity. NT-proBNP is known as a biomarker of heart failure, currently being widely studied as an alternative to assess the toxic effects of anthracyclines on the heart but the results are still varied.

Aim : To assess the association between changes in NT-proBNP levels and LVEF value in breast cancer patients after completing anthracycline-based chemotherapy at dr. Sardjito hospital

Methods : A cross-sectional observational study was conducted in May - November 2022. Data was taken from the clinical registry and medical records of breast cancer patients diagnosed from 2018 - 2020 who met the inclusion and exclusion criteria. Sampling was done with consecutive sampling method. The association between changes in NT-proBNP levels and LVEF was analyzed using Pearson's correlation test if the data were normally distributed, or Spearman's correlation test if the data were not normally distributed.

Result : There were 47 breast cancer patients with an average age of 52.74 ± 8.30 years old. There was a significant decrease in LFEV before and after the completion of chemotherapy (71.17 ± 5.98 % to 68.72 ± 6.77 %, $p=0.003$). Meanwhile, NT-proBNP levels did not increase significantly after chemotherapy (65.80 ($10.00 - 483.6$) pg/mL to 70.70 ($9.30 - 1370$) pg/mL, $p=0.452$). There was a weak but not significant negative association between changes in NT-proBNP levels and decreased LVEF after the completion of anthracycline-based chemotherapy ($r = -0.186$, $p = 0.211$). Other factors such as age, cumulative dose of anthracyclines, diabetes mellitus, hypertension, clinical stage of cancer, body mass index, and combination chemotherapy with taxane were also not significantly associated with the decrease in LVEF after chemotherapy.

Conclusion : No significant association was found between changes in NT-proBNP levels and a decrease in LVEF measured after the completion of anthracycline-based chemotherapy in breast cancer patients at dr. Sardjito hospital

Key Words : *breast cancer, anthracyclines, NT-proBNP, left ventricular ejection fraction, cardiotoxicity*