

**HUBUNGAN KADAR SERUM VITAMIN D DENGAN PENURUNAN FUNGSI SISTOLIK VENTRIKEL KIRI PADA WANITA DENGAN *LOCALLY ADVANCED BREAST CANCER* YANG MENJALANI KEMOTERAPI DOKSORUBISIN DI RSUD DR SOETOMO SURABAYA**

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**ABSTRAK**

**Latar Belakang:** Kanker payudara paling umum menyerang wanita dengan rata-rata kematian 17 per 100.000 penduduk di Indonesia. Kemoterapi dengan doksorubisin dapat menyebabkan terjadinya kardiotoxikitas dan meningkatkan mortalitas hingga 50%. Vitamin D dapat menyebabkan efek tidak langsung penurunan fungsi jantung. Penelitian ini meneliti hubungan keduanya dalam memprediksi kasus wanita dengan *locally advanced breast cancer* yang menjalani kemoterapi Doksorubisin.

**Tujuan Penelitian:** Mengetahui hubungan kadar serum vitamin D darah dengan penurunan fungsi sistolik ventrikel kiri pada wanita dengan *locally advanced breast cancer* yang menjalani kemoterapi Doksorubisin di RSUD Dr. Soetomo Surabaya.

**Metode Penelitian:** Penelitian ini bersifat analitik obsevasional dengan desain penelitian *cross sectional study*. Pengambilan data vitamin D dan ekokardiografi dilakukan pada pasien yang telah menjalani kemoterapi 1 tahun. Data kemudian diuji menggunakan uji koefisien kontingensi dan uji regresi.

**Hasil Penelitian:** Pada penelitian ini didapatkan defisiensi vitamin D sebanyak 17 orang (56,7%), Pada pemeriksaan ekokardiografi, didapatkan rerata *left ventricle ejection fraction* (LVEF) sebelum pemberian kemoterapi neoadjuvan sebesar  $65,0 \pm 3$  dan rerata LVEF setelah pemberian kemoterapi neoadjuvan sebesar  $61,80 \pm 6,283$ . Sebanyak 18 pasien (60%) mengalami penurunan fungsi sistolik ventrikel kiri. Terdapat hubungan yang signifikan antara kadar vitamin D dengan penurunan fungsi sistolik ventrikel kiri ( $p=0,007$ ), dengan Odd ratio pada penelitian ini adalah 1.369 (CI 95%, range 0.953-1.967)

**Kesimpulan:** adanya penurunan fungsi sistolik ventrikel kiri pada pasien dengan kanker payudara *locally advance breast cancer* yang menjalani kemoterapi Doksorubisin dengan durasi lebih dari 12 bulan dan defisiensi vitamin D secara stastistik signifikan meningkatkan penurunan fungsi sistolik ventrikel kiri pada pasien yang menjalani kemoterapi neoajuvan Doksorubisin di RSUD Dr Soetomo Surabaya. Namun secara klinis tidak signifikan meningkatkan penurunan fungsi sistolik ventrikel kiri pada pasien yang menjalani kemoterapi neoajuvan Doksorubisin di RSUD Dr Soetomo Surabaya

**Keyword:** *locally advanced breast cancer, vitamin D, left ventricle ejection fraction (LVEF), Doksorubisin*

**RELATIONSHIP BETWEEN VITAMIN D SERUM LEVELS WITH THE DECREASE OF THE LEFT VENTRICLE SYSTEMIC FUNCTION IN WOMEN WITH LOCALLY ADVANCED BREAST CANCER WHO UNDERWENT DOXORUBICINE CHEMOTHERAPY IN DR. SOETOMO GENERAL HOSPITAL SURABAYA**

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**ABSTRACT**

**Background:** Breast cancer commonly attacks women with an average death of 17 per 100,000 population in Indonesia. Chemotherapy with doxorubicin can cause cardiotoxicity and increase mortality by up to 50%. Vitamin D can cause indirect effects on decreasing heart function. This study examines the relationship between those two in predicting the case of women with locally advanced breast cancer who underwent Doxorubicin chemotherapy.

**Aim of This Study:** To know the relationship of serum blood vitamin D levels with decreased left ventricular systolic function in women with locally advanced breast cancer who underwent Doxorubicin chemotherapy at Dr. Soetomo General Hospital Surabaya.

**Subject And Method:** This research is an analytical observational with cross sectional study design. Data collection for vitamin D and echocardiography was performed in patients who had undergone chemotherapy for 1 year. The data is then tested using the contingency coefficient test and regression test.

**Result:** In this study, 17 people (56.7%) with vitamin D deficiency were found. On echocardiographic examination, the average left ventricle ejection fraction (LVEF) before neoadjuvant chemotherapy was given was  $65.0 \pm 3$  and the average LVEF after neoadjuvant chemotherapy was  $61, 80 \pm 6,283$ . A total of 18 patients (60%) experienced a decrease in left ventricular systolic function. There was a significant relationship between vitamin D levels and decreased left ventricular systolic function ( $p = 0.007$ ), with odd ratio in this study being 1.369 (CI 95%, range 0.953-1.967)

**Conclusion:** A decrease in left ventricular systolic function in patients with locally advanced breast cancer undergoing Doxorubicin chemotherapy with a duration of more than 12 months and vitamin D deficiency statistically significantly increases the decrease in left ventricular systolic function in patients undergoing Doxorubicin neojuvant chemotherapy at Dr Soetomo Hospital Surabaya. However, it does not clinically significantly increase the decrease in left ventricular systolic function in patients undergoing Doxorubicin neoajuvan chemotherapy at Dr Soetomo Hospital Surabaya.

**Keyword:** *locally advanced breast cancer, vitamin D, left ventricle ejection fraction (LVEF), doxorubicin*