

HUBUNGAN ANTARA BIOMARKER CA 125 DAN NT-PROBNP DENGAN FUNGSI VENTRIKEL PADA PASIEN GAGAL JANTUNG AKUT

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ABSTRAK

Latar belakang: Gagal jantung akut (GJA) terus menjadi tantangan kesehatan dengan tingginya angka kematian dan rawat inap ulang. Biomarker seperti NT-proBNP dan antigen karbohidrat 125 (CA-125) terbukti dapat membantu diagnosis dan manajemen GJA. Selama ini NT-proBNP hanya merefleksikan severitas fungsi ventrikel kiri tanpa keterlibatan fungsi ventrikel kanan. CA 125 dianggap menjadi biomarker yang bermanfaat ketika GJA terjadi dengan gangguan fungsi ventrikel kanan. Penelitian ini bertujuan menganalisis hubungan antara kadar CA-125 dan NT-proBNP dengan fungsi ventrikel kiri dan kanan pada pasien GJA.

Metode: Studi potong-lintang dilakukan pada 61 subjek GJA di RSUP Dr. Kariadi. Kadar serum CA-125 dan NT-ProBNP diukur saat masuk rumah sakit dan dilakukan analisis korelasi spearman. Fungsi ventrikel dievaluasi melalui ekokardiografi, dan derajat kongesti diukur dengan *Congestion Composite Score* (CCS).

Hasil: Rerata kadar CA-125 adalah 97,5 U/mL dan NT-ProBNP 5134 pg/dL. Dari hasil; analisis menunjukkan korelasi positif kuat antara CA-125 dan NT-ProBNP ($r=0,6$; $p=0,001$). Keduanya berkorelasi positif dengan derajat kongesti (masing-masing $r=0,34$ dan $r=0,29$; $p<0,05$). CA-125 menunjukkan korelasi negatif dengan fungsi ventrikel kanan (TAPSE $r= -0,28$ dan RV FAC $r= -0,48$; $p<0,05$), namun tidak terdapat korelasi bermakna dengan fungsi sistolik ventrikel kiri.

Kesimpulan: Terdapat korelasi positif antara CA-125 dan NT-ProBNP pada GJA, keduanya berkorelasi dengan derajat kongesti. CA-125 menunjukkan korelasi negatif dengan penurunan fungsi ventrikel kanan, namun tidak ditemukan korelasi dengan fungsi ventrikel kiri,.

Kata kunci: Gagal Jantung Akut, NT-proBNP, CA 125, CCS, RV FAC

THE CORRELATION BETWEEN BIOMARKER CA 125 AND NT-PROBNP WITH VENTRICULAR FUNCTION IN ACUTE HEART FAILURE PATIENTS

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ABSTRACT

Background: Acute Heart Failure (AHF) continues to pose a health challenge with high mortality and readmission rates. Biomarkers such as NT-proBNP and Carbohydrate Antigen 125 (CA-125) have proven to assist in the diagnosis and management of AHF. Thus far, NT-proBNP has primarily reflected the severity of left ventricular function without involving right ventricular function. CA 125 is considered a valuable biomarker, particularly when AHF involves impaired right ventricular function. This research aims to analyze the relationship between CA-125 and NT-proBNP levels and the left and right ventricular functions in AHF patients.

Methods: A cross-sectional study was conducted on 61 GJA subjects at Dr. Kariadi General Hospital. Serum levels of CA-125 and NT-ProBNP were measured upon hospital admission, and Spearman correlation analysis was performed. Ventricular function was evaluated through echocardiography, and the degree of congestion was assessed using the Congestion Composite Score (CCS).

Results:

The mean level of CA-125 was 97.5 U/mL, and NT-ProBNP was 5134 pg/dL. The results of the analysis indicated a strong positive correlation between CA-125 and NT-ProBNP ($r=0.6$; $p=0.001$). Both were positively correlated with the degree of congestion ($r=0.34$ and $r=0.29$, respectively; $p<0.05$). CA-125 showed a negative correlation with right ventricular function (TAPSE $r=-0.28$ and RV FAC $r=-0.48$; $p<0.05$), but no significant correlation was observed with left ventricular systolic function.

Conclusion: There is a positive correlation between CA-125 and NT-ProBNP in AHF; both correlate with the degree of congestion. CA-125 exhibits a negative correlation with the decline in right ventricular function, but no correlation was found with left ventricular function.

Keywords: AHF, NT-proBNP, CA 125, CCS, RV FAC