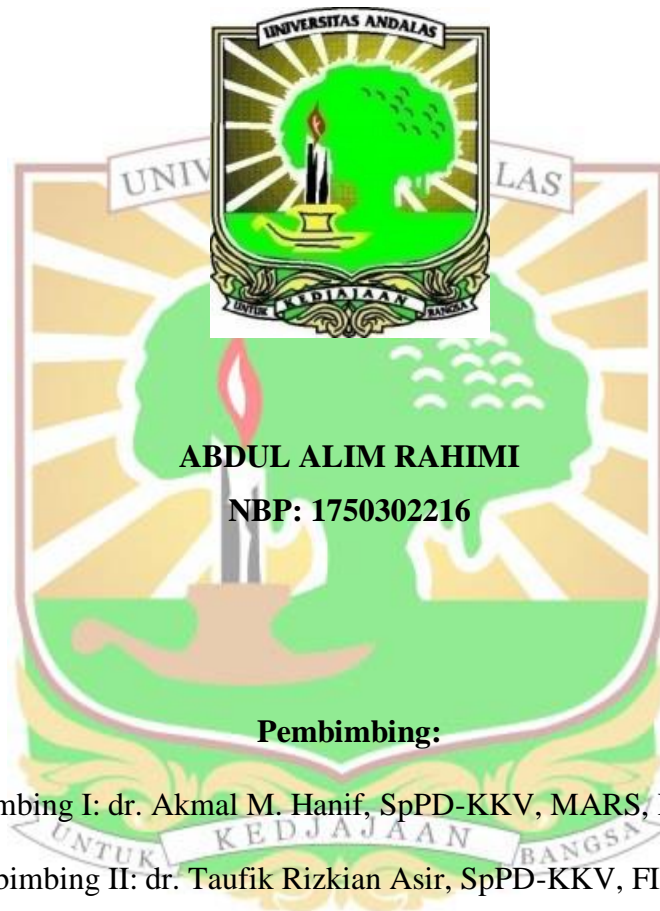


**TESIS**

**KORELASI ANTARA KADAR *N-TERMINAL PRO B-TYPE NATRIURETIC PEPTIDE* SERUM DENGAN NILAI *GLOBAL LONGITUDINAL STRAIN* PADA *HEART FAILURE WITH PRESERVED EJECTION FRACTION***



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## ABSTRAK

### **KORELASI ANTARA KADAR *N-TERMINAL PRO B-TYPE NATRIURETIC PEPTIDE* SERUM DENGAN NILAI *GLOBAL LONGITUDINAL STRAIN* PADA *HEART FAILURE WITH PRESERVED EJECTION FRACTION***

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**Pendahuluan:** Diagnosis *heart failure with preserved ejection fraction* (HFpEF) ditegakkan berdasarkan adanya gejala dan tanda gagal jantung serta bukti objektif yang konsisten dengan disfungsi diastolik termasuk *N-terminal pro B-type natriuretic peptide* (NT-proBNP) serum. *Global longitudinal strain* (GLS) selain berhubungan dengan disfungsi sistolik yang tidak ketara, juga berhubungan dengan *time constant of active left ventricle relaxation* (Tau) yang merupakan pemeriksaan baku emas disfungsi diastolik pada HFpEF. Penelitian ini bertujuan untuk mengetahui korelasi antara kadar NT-proBNP serum dengan nilai GLS sebagai penanda disfungsi diastolik pada HFpEF.

**Metode:** Penelitian ini merupakan penelitian observasional analitik dengan pendekatan *cross-sectional* yang dilaksanakan di Poliklinik Jantung RSUP dr. M. Djamil selama 6 bulan, 23 sampel dipilih secara *consecutive sampling* yaitu pasien HFpEF dengan usia < 75 tahun yang memenuhi kriteria inklusi dan eksklusi. Dilakukan pemeriksaan nilai GLS dan kadar NT-proBNP serum. Selanjutnya dilakukan analisis statistik dengan uji korelasi parsial untuk melihat korelasi antara faktor independen (kadar NT-proBNP serum) dengan faktor dependen (nilai GLS) pada HFpEF dengan mengontrol faktor perancu (hipertensi).

**Hasil:** Kadar NT-proBNP serum meningkat pada HFpEF yaitu 1031 (297 - 3299) pg/ml. Nilai GLS menurun pada HFpEF yaitu  $-18,628 \pm 0,778\%$ . Terdapat korelasi yang bermakna antara kadar NT-proBNP serum dengan nilai GLS pada HFpEF ( $r = 0,720$ ,  $p < 0,001$ ).

**Kesimpulan:** Penilaian GLS disarankan pada diagnosis HFpEF.

**Kata Kunci:** *N-terminal pro B-type natriuretic peptide*, *global longitudinal strain*, *heart failure with preserved ejection fraction*

## ABSTRACT

### CORRELATION BETWEEN THE LEVELS OF N-TERMINAL PRO B-TYPE NATRIURETIC PEPTIDE SERUM AND GLOBAL LONGITUDINAL STRAIN IN HEART FAILURE WITH PRESERVED EJECTION FRACTION

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**Introduction:** The diagnosis of heart failure with preserved ejection fraction (HFpEF) was made based on the presence of symptoms and signs of heart failure as well as objective evidence consistent with diastolic dysfunction including N-terminal pro B-type natriuretic peptide (NT-proBNP) serum. Global longitudinal strain (GLS) in addition to being associated with subtle systolic dysfunction, is also associated with the time constant of active left ventricle relaxation (Tau) which is the gold standard for diastolic dysfunction in HFpEF. This study aimed to determine the correlation between NT-proBNP serum levels and GLS as a marker of diastolic dysfunction in HFpEF.

**Methods:** This study is an analytic observational study with a cross-sectional approach which was carried out at the Cardiology Polyclinic, RSUP dr. M. Djamil for 6 months, 23 samples were selected by consecutive sampling, namely HFpEF patients aged <75 years who met the inclusion and exclusion criteria. NT-proBNP serum and GLS were examined. Furthermore, statistical analysis with partial correlation test was performed to see the correlation between the independent factor (NT-proBNP serum) and the dependent factor (GLS) in HFpEF by controlling for confounding factor (hypertension).

**Results:** NT-proBNP serum increased in HFpEF at 1031 (297 - 3299) pg/ml. The GLS value decreased in HFpEF at  $-18.628 \pm 0.778\%$ . There was a significant correlation between NT-proBNP serum levels and GLS values in HFpEF ( $r = 0.720$ ,  $p < 0.001$ ).

**Conclusion:** GLS assessment is recommended for the diagnosis of HFpEF.

**Keyword:** N-terminal pro B-type natriuretic peptide, global longitudinal strain, heart failure with preserved ejection fraction