Pemeriksaan cardiotrophin 1 serum untuk deteksi hipertrofi ventrikel kiri pada pasien hipertensi primer = Examination cardiotrophin 1 serum for detection of left ventricular hypertrophy in primary hypertension patients

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Abstrak

Hipertrofi ventrikel kiri atau Left ventricle hypertrophy (LVH) adalah faktor risiko independen terjadinya gagal jantung pada pasien hipertensi. Diagnosis dini LVH diperlukan untuk mencegah kerusakan lebih lanjut pada otot jantung. Cardiotropin-1 (CT-1) diproduksi oleh kardiomiosit dan fibroblas, yang kadarnya dilaporkan meningkat pada pasien hipertensi primer.
Tujuan : Membuktikan manfaat CT-1 serum untuk mendeteksi LVH pada pasien hipertensi primer.
Metode : Penelitian uji diagnostik dilaksanakan di RSCM Jakarta periode Februari s/d Maret 2013. Subyek penelitian adalah 75 pasien hipertensi primer dengan atau tanpa LVH. Diagnosis LVH dilakukan dengan ekokardiografi sebagai baku emas dan elektrokardiografi/EKG (kriteria Sokolow Lyon voltage, Cornell voltage dan Cornell product). Kadar CT-1 serum diperiksa dari sampel darah vena dengan metode ELISA.
Hasil : Berdasarkan ekokardiografi 46 orang (61,3%) LVH dan 29 orang (38,7%) tidak LVH. Kadar CT-1 subyek LVH adalah 82,96 ± 351,843 pg/mL dan subyek tanpa LVH 4,55 ± 1,281 pg/mL (p=0,01). Korelasi CT-1 dengan LVMI adalah tidak bermakna (p=0,1). Luas area dibawah kurva ROC CT-1 untuk diagnosis LVH adalah 0,67 (p=0,01). Nilai cut-off CT-1 adalah 4,45 pg/mL. Uji diagnostik CT-1: Sensitifitas 54,4%, spesifisitas 75,9, NDP 78,1%, NDN 51,2 dan akurasi 61,3%. Uji diagnostik kombinasi CT-1 dan EKG (salah satu kriteria positif LVH): sensitifitas 67,4%, spesifisitas 72,4% , NDP 79,5%, NDN 58,3% dan akurasi 69,3%.
Simpulan. CT-1 kurang sensitif namun cukup spesifik untuk diagnosis hipertrofi ventrikel kiri (LVH). Kombinasi CT-1 dengan EKG meningkatkan nilai diagnostik pemeriksaan untuk deteksi LVH pada pasien hipertensi primer.
<hr><i>Left ventricle hypertrophy (LVH) is independent risk factor of heart failure on hypertension patients. Early detection of LVH is necessary to prevent extensive damage of heart muscle. Cardiotropin-1 (CT-1) is produce by cardiomyosite and fibroblast, that the level of CT-1 has been reported increase on primary hypertension patients.
Aim : To prove the benefit of CT-1 serum to detect LVH on primary hypertension patients.
Methods : A diagnostic study has been conducted on RSCM Jakarta on the periode of February to March 2013. Research subjects were 75 primary hypertension patients with and without LVH. LVH diagnosis was performed by echocardiography examination as gold standard and electrocardiography/ECG (Sokolow Lyon voltage, Cornell Voltage and Cornell product criterias). CT-1 level was measured by ELISA method from vein blood sample.
Results : Based on echocardiography examination 46 patients (61.3%) were diagnosed as LVH and 29 patients (38.7%) without LVH. The level of CT-1 of patients with LVH was 82.96 ± 351.843 pg/mL and 4.55 ± 1.,281 pg/mL on patients without LVH (p=0.01). Correlation between CT-1 and Left Ventricular Mass Index was not significant (p=0.1). Area under the ROC curve was 0.67 (p=0.01). The cut-off of CT-1

level for diagnosis of LVH was 4.45 pg/mL. Diagnostic test yield the sensitivity of CT-1 for diagnosis of LVH was 54.4%, specificity 75.9%, PPV 78.1%, NPV 51.2% and accuracy was 61.3%. Diagnostic test of combination CT-1 and ECG (positive LVH by one or more ECG's criteria) yield sensitivity 67.4%, specificity 72.4% , PPV 79,5%, NPV 58.3% and accuracy 69.3%.
Conclusion. CT-1 examination was not sensitive but specific for LVH diagnosis. Combination of CT-1 and ECG examination was improve diagnostic value of CT-1 for detection of LVH on primary hypertension patients.</i>