

Deteksi dini cardiac siderosis pada anak Thalassemia Mayor: korelasi antara Ekokardiografi Tissue Doppler dengan MRI T2* 3 Tesla Jantung = Early detection of cardiac siderosis in Thalassemia Major: correlation between Tissue Doppler Echocardiography and Cardiac T2*MRI 3 Tesla

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Abstrak

Latar belakang: Pemeriksaan cardiac siderosis dengan MRI T2 1,5 Tesla merupakan baku emas tetapi belum ada yang menggunakan MRI 3 Tesla. Provinsi Aceh merupakan daerah yang mempunyai banyak pasien thalassemia mayor di Indonesia, sampai saat ini belum ada data mengenai cardiac siderosis dan gangguan fungsi diastolik yang diperiksa dengan ekokardiografi tissue Doppler. Pemeriksaan cardiac siderosis yang tersedia di Aceh adalah MRI 3 Tesla.

Tujuan: Menilai korelasi antara gangguan fungsi diastolik dengan cardiac siderosis ekokardiografi tissue Doppler dan feritin serum pada pasien anak thalassemia major di Aceh.

Metode: Studi observasional dilakukan di Rumah Sakit Umum Dr. Zainoel Abidin (RSUZA) Banda Aceh pada bulan Juli hingga September 2018. Dilakukan pencatatan data karakteristik, Hb pre-transfusi, feritin serum, data ekokardiografi dan nilai MRI T2 3 Tesla jantung. Korelasi antara MRI T2 jantung dengan ekokardiografi dan feritin serum dinilai dengan uji Pearson.

Hasil: Penelitian ini mengikutsertakan 34 subyek usia 8-17,5 tahun. Cardiac siderosis didapat pada 8 (23,5%) subyek. Gangguan diastolik didapati pada 10 (29,5%) subyek. Tidak dijumpai korelasi antara MRI T2 jantung dengan fungsi diastolik ETD ($r = 0,086$; $p = 0,62$). Terdapat korelasi signifikan antara MRI T2 dengan feritin serum ($r = -0,537$; $p < 0,0001$).

Simpulan: Terdapat korelasi kuat antara MRI T2 jantung dengan kadar feritin serum, tetapi tidak terdapat korelasi antara fungsi diastolik dengan MRI T2 3 Tesla jantung

.....Backgrounds: Cardiac T2 MRI at 1,5 T remains gold standard for cardiac siderosis. However in some centres only MRI 3 T is available. Aceh Province is the largest region with thalassemia careers in Indonesia, there are no data about cardiac siderosis and diastolic dysfunction in children with thalassemia major in Aceh. Thalassemia center in Aceh has only MRI 3 Tesla

Objectives: To study correlation diastolic function cardiac siderosis with cardiac T2 MRI 3 Tesla among Acehnesse children thalassemia.

Methods: Observational studies were conducted at Dr. General Hospital Zainoel Abidin (RSUZA) Banda Aceh from July to September 2018. Data on characteristics, pre-transfusion hemoglobin, serum ferritin, echocardiography and cardiac T2 MRI were recorded. Correlation between heart T2 MRI is carried out by the Pearson test as well as serum ferritin.

Results: Thirty-four subjects participated in the study aged 8-17.5 years. Eight subjects (23.5%) experienced cardiac siderosis which was examined by cardiac T2 MRI T2 3 Tesla. Diastolic dysfunction examination by tissue Doppler echocardiography were found in 10 (29.5%) subjects. There was no correlation between MRI of heart T2 with diastolic function tissue Doppler echocardiography ($r = 0.086$; $p = 0.62$). There was a significant correlation between MRI T2 and serum ferritin ($r = -0.537$; $p < 0.0001$).

Conclusion: There was no correlation between cardiac T2 MRI 3 Tesla and diastolic function ETD. There was a strong and significant correlation between MRI T2 and serum ferritin. Tissue Doppler can detect early diastolic dysfunction in thalassemia patients better than conventional.