Korelasi Hepsidin dengan Kelainan Kardiovaskular pada Anak dengan Penyakit Ginjal Kronik = Correlation of Hepcidin and Cardiovascular Disease in Children with Chronic Kidney Disease

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Abstrak

Kelainan kardiovaskular merupakan komplikasi dan penyebab kematian terbanyak pada anak penyakit ginjal kronik (PGK). Hepsidin adalah protein berperan dalam homeostasis besi yang berkontribusi dalam patogenesis anemia penyakit kronik. Penelitian sebelumnya menunjukkan hubungan hepsidin dan kelainan kardiovaskular pada pasien PGK dewasa, tetapi belum ada pada anak PGK. Penelitian ini bertujuan untuk menilai korelasi hepsidin dan kelainan kardiovaskular pada anak PGK. Penelitian dengan metode potong lintang dilakukan pada anak PGK stadium 3–5 yang berusia 2–18 tahun di rumah sakit Cipto Mangunkusumo (RSCM). Ekokardiografi menilai left ventricular mass index (LVMI), relative wall thickness (RWT), fungsi sistolik, diastolik, dan peningkatan carotid intima media thickness (cIMT). Kadar hepsidin diperiksa dengan menggunakan ELISA (enzyme-linked immunosorbent assay). Penelitian ini melibatkan 78 anak dengan PGK stadium 3–5. Penelitian ini menunjukkan korelasi hepsidin Q2 dan LVMI bermakna [adjusted b 0,37 (95% IK 0,08–0,65); p = 0,011] dan hepsidin Q4 terhadap LVMI [adjusted b 0,31 (95% IK 0,02–0,60); p = 0,036] pada analisis multivariat regresi linear. Korelasi bermakna antara hepsidin dan MV E/A yaitu kadar hepsidin Q2 [Crude b -0,16 (95% IK -0,29 – -0,02); p = 0,024] juga ditemukan. Tidak ada korelasi hepsidin dan fungsi sistolik serta peningkatan cIMT. Penelitian ini merupakan penelitian awal dan membutuhkan penelitian prospektif selanjutnya untuk dapat memastikan hubungan hepsidin dan kelainan kardiovaskular.

.....Cardiovascular disease (CVD) is a common complication and an important cause of mortality in children with chronic kidney disease (CKD). Hepcidin is a protein that regulates iron metabolism and has been closely linked with the pathogenesis of anemia in chronic disease. Recent studies have shown a substantial association of hepcidin and CVD in adults with CKD, however this association has not been studied in children. This study aimed to investigate the correlation of hepcidin and CVD in children with chronic kidney disease. This was a cross sectional study that involved children aged 2–18 years with CKD in Cipto Mangunkusumo Hospital. Echocardiography was performed to describe LVMI, RWT, systolic and diastolic function as well as increase cIMT. Plasma hepcidin was obtained and analysed using ELISA (enzyme-linked immunosorbent assay). This study involved 78 patients with CKD stage 3–5. The study showed a positive correlation of hepcidin Q2 and LVMI [adjusted b 0,37 (95% IK 0,08–0,65); p=0,011] as well as hepsidin Q4 and LVMI [adjusted b 0,31 (95% IK 0,02–0,60); p = 0,036] in the multivariate linear regression analysis. A correlation of hepcidin Q2 and MV E/A [Crude b -0.16 (95% IK -0.29 – -0.02); p = 0.024] was also observed. We did not find any correlation of hepcidin and systolic function as well as increased cIMT. Our study needs further prospective cohort studies to confirm our results.