

KORELASI UKURAN DAN JUMLAH NODUL BERDASARKAN PEMERIKSAAN CT SCAN DENGAN KADAR ASPARTATE TRANSAMINASE (AST) DAN ALANINE TRANSAMINASE (ALT) PADA KARSINOMA HEPATOSELULER

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INTISARI

Latar Belakang: Karsinoma hepatoseluler (KHS) merupakan keganasan hati primer dengan angka morbiditas dan mortalitas tinggi. Penilaian morfologi tumor melalui pencitraan radiologi sering dikaitkan dengan fungsi hati, yang dinilai melalui kadar enzim AST dan ALT. Namun, hubungan antara ukuran dan jumlah nodul dengan kadar enzim hati masih belum jelas. Penelitian ini bertujuan untuk Mengetahui korelasi antara ukuran dan jumlah nodul berdasarkan pemeriksaan CT scan dengan kadar AST dan ALT pada karsinoma hepatoseluler.

Metode: Penelitian ini menggunakan desain analitik observasional dengan pendekatan retrospektif pada pasien KHS yang menjalani pemeriksaan CT scan kontras multifase dan pemeriksaan laboratorium fungsi hati. Ukuran dan jumlah nodul hati diukur melalui interpretasi radiologi dengan reliabilitas intraobserver yang dinilai menggunakan kappa statistic. Analisis korelasi antara ukuran dan jumlah nodul dengan kadar AST dan ALT dilakukan dengan uji korelasi Pearson dan dilanjutkan korelasi parsial untuk menilai pengaruh variabel perancu seperti sirosis, hepatitis B, hepatitis C, obesitas, dan skor Child-Pugh.

Hasil: Didapatkan 50 orang subjek penelitian, sebagian besar pasien berusia rata-rata 57,8 tahun, mayoritas laki-laki (74%) dengan hepatitis B (68%), dan memiliki nodul berukuran >5 cm (86%) serta jumlah nodul >3 (48%). Mayoritas kadar AST dan ALT berada pada rentang 101–250 IU/L (44%). Reliabilitas intraobserver pengukuran ukuran dan jumlah nodul termasuk kategori sangat baik. Tidak ditemukan korelasi signifikan antara ukuran maupun jumlah nodul dengan kadar AST dan ALT ($p>0,05$). Setelah penyesuaian variabel perancu, terjadi perubahan koefisien korelasi >10%, menunjukkan bahwa sirosis, hepatitis B, hepatitis C, obesitas, dan skor Child-Pugh berperan sebagai faktor perancu utama.

Kesimpulan: Ukuran dan jumlah nodul KHS berdasarkan CT scan kontras multifase tidak berkorelasi signifikan dengan kadar AST dan ALT. Fungsi hati pasien KHS lebih dipengaruhi oleh status sirosis, infeksi hepatitis, obesitas, dan skor Child-Pugh dibandingkan beban tumor.

Kata kunci: karsinoma hepatoseluler, nodul hati, transaminase

CORRELATION OF CT SCAN-BASED NODULE SIZE AND NUMBER WITH ASPARTATE TRANSAMINASE (AST) AND ALANINE TRANSAMINASE (ALT) LEVELS IN HEPATOCELLULAR CARCINOMA

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ABSTRACT

Background: *Hepatocellular carcinoma (HCC) is a primary liver malignancy with high morbidity and mortality. Assessment of tumor morphology through radiological imaging is often associated with liver function, as assessed by AST and ALT enzyme levels. However, the relationship between nodule size and number and liver enzyme levels remains unclear. This study aims to determine the correlation between CT scan-based nodule size and number with AST and ALT levels in hepatocellular carcinoma.*

Methods: *This study used an observational analytical design with a retrospective approach in patients with HCC who underwent multiphase contrast CT scans and liver function laboratory tests. The size and number of liver nodules were measured through radiological interpretation, with intraobserver reliability assessed using the kappa statistic. Correlation analysis between the size and number of nodules and AST and ALT levels was performed using the Pearson correlation test, followed by partial correlation to assess the influence of confounding variables such as cirrhosis, hepatitis B, hepatitis C, obesity, and the Child-Pugh score.*

Results: *Fifty subjects were recruited, with a mean age of 57.8 years, the majority male (74%), with hepatitis B (68%), and nodules measuring >5 cm (86%) and having >3 nodules (48%). The majority of AST and ALT levels were in the range of 101–250 IU/L (44%). Intraobserver reliability of nodule size and number measurements was categorized as very good. No significant correlation was found between nodule size and number with AST and ALT levels ($p > 0.05$). After adjustment for confounding variables, the correlation coefficient changed by >10%, indicating that cirrhosis, hepatitis B, hepatitis C, obesity, and the Child-Pugh score were the main confounding factors.*

Conclusion: *The size and number of HCC nodules based on multiphase contrast CT scans did not significantly correlate with AST and ALT levels. Liver function in HCC patients was more influenced by cirrhosis status, hepatitis infection, obesity, and the Child-Pugh score than by tumor burden.*

Keywords: *hepatocellular carcinoma, liver nodules, transaminases*