Korelasi antara Volume Kandung Empedu, Jumlah Batu, dan Volume Batu pada Pemeriksaan MRCP terhadap
Gangguan Fungsi Hati Pasien dengan Obstruksi Bilier akibat Cholecystolithiasis dan/atau Choledocholithiasis
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INTISARI

KORELASI ANTARA VOLUME KANDUNG EMPEDU, JUMLAH BATU, DAN VOLUME BATU PADA PEMERIKSAAN MRCP TERHADAP GANGGUAN FUNGSI HATI PASIEN DENGAN OBSTRUKSI BILIER AKIBAT *CHOLECYSTOLITHIASIS* DAN/ATAU *CHOLEDOCHOLITHIASIS*

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Latar Belakang: Penyakit batu empedu merupakan salah satu penyakit gastrointestinal yang sering ditemukan dengan komplikasi berupa obstruksi bilier yang dapat menyebabkan gangguan fungsi hati. Pemeriksaan *Magnetic Resonance Cholangiopancreatography* (MRCP) mampu mengevaluasi karakteristik batu empedu, termasuk volume kandung empedu, jumlah batu, dan volume batu. Namun, hubungan antara parameter radiologis tersebut dengan gangguan fungsi hati masih belum banyak diteliti.

Tujuan: Mengetahui korelasi antara volume kandung empedu, jumlah batu, dan volume batu pada pemeriksaan MRCP terhadap gangguan fungsi hati pasien dengan obstruksi bilier akibat cholecystolithiasis dan/atau choledocholithiasis.

Metode: Penelitian ini merupakan penelitian observasional analitik dengan rancangan potong lintang (*cross-sectional*) retrospektif. Data diperoleh dari pasien dewasa dengan diagnosis cholecystolithiasis dan/atau choledocholithiasis yang menjalani pemeriksaan MRCP di RSUP Dr. Sardjito Yogyakarta. Pengukuran volume kandung empedu dan volume batu dilakukan menggunakan metode ellipsoid, sedangkan jumlah batu dihitung secara manual. Parameter fungsi hati meliputi SGOT, SGPT, bilirubin *direct*, dan bilirubin *indirect* diperoleh dari rekam medis. Uji reliabilitas interobserver dianalisis menggunakan *Intraclass Correlation Coefficient* (ICC). Analisi korelasi dilakukan dengan Korelasi Spearman.

Hasil: Reliabilitas interobserver menunjukkan kesesuaian yang baik hingga sangat baik pada seluruh parameter pengukuran. Analisis korelasi menunjukkan tidak terdapat hubungan yang bermakna antara volume kandung empedu, volume batu, maupun jumlah batu dengan kadar SGOT, SGPT, bilirubin *direct*, dan bilirubin *indirect* pada kedua observer (seluruh $p>0,05$). Koefisien korelasi yang diperoleh menunjukkan hubungan yang sangat lemah hingga lemah.

Kesimpulan: Volume kandung empedu, volume batu, dan jumlah batu pada pemeriksaan MRCP tidak berkorelasi secara bermakna dengan parameter fungsi hati pada pasien dengan obstruksi bilier akibat *cholecystolithiasis* dan/atau *choledocholithiasis*.

Kata kunci: *MRCP, batu empedu, volume kandung empedu, volume batu, fungsi hati*

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ABSTRACT

CORRELATION BETWEEN GALLBLADDER VOLUME, STONE NUMBER, AND STONE VOLUME MEASURED ON MRCP AND LIVER FUNCTION IMPAIRMENT IN PATIENTS WITH BILIARY OBSTRUCTION SECONDARY TO CHOLECYSTOLITHIASIS AND/OR CHOLEDOCHOLITHIASIS

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Background: *Gallstone disease is one of the most common gastrointestinal disorders and may be complicated by biliary obstruction, leading to liver function impairment. Magnetic Resonance Cholangiopancreatography (MRCP) enables the evaluation of gallstone characteristics, including gallbladder volume, stone number, and stone volume. However, the relationship between these radiological parameters and liver function impairment has not been extensively investigated.*
Objective: *To determine the correlation between gallbladder volume, stone number, and stone volume measured on MRCP and liver function impairment in patients with biliary obstruction secondary to cholecystolithiasis and/or choledocholithiasis.*
Methods: *This was a retrospective cross-sectional analytic observational study. Data were obtained from adult patients diagnosed with cholecystolithiasis and/or choledocholithiasis who underwent MRCP at Dr. Sardjito Hospital, Yogyakarta. Gallbladder volume and stone volume were measured using the ellipsoid method, while stone number was counted manually. Liver function parameters, including serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), direct bilirubin, and indirect bilirubin, were obtained from medical records. Interobserver reliability was assessed using the Intraclass Correlation Coefficient (ICC). Correlation analysis was performed using Spearman's rank correlation test.*
Results: *Interobserver reliability demonstrated good to excellent agreement for all measurement parameters. Correlation analysis showed no significant association between gallbladder volume, stone volume, or stone number and serum SGOT, SGPT, direct bilirubin, or indirect bilirubin levels for either observer (all $p > 0.05$). The correlation coefficients indicated very weak to weak relationships.*
Conclusion: *Gallbladder volume, stone volume, and stone number measured on MRCP were not significantly correlated with liver function parameters in patients with biliary obstruction secondary to cholecystolithiasis and/or choledocholithiasis.*
Keywords: *MRCP, gallstones, gallbladder volume, stone volume, liver function.*