

PERBANDINGAN PARAMETER ULTRASONOGRAFI ABDOMEN PREOPERATIF SEBAGAI FAKTOR PREDIKTOR TERHADAP LUARAN PROSEDUR KASAI PADA PASIEN ATRESIA BILIER

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INTISARI

Latar Belakang: Atresia bilier (AB) adalah kelainan fibroobliteratif progresif saluran empedu intra dan ekstrahepatik yang dapat menyebabkan sirosis serta berujung kebutuhan transplantasi hepar pada anak. Heparik portoenterostomi Kasai merupakan standar terapi untuk AB. Beberapa parameter ultrasonografi abdomen preoperatif berpotensi menjadi faktor prediktor luaran prosedur Kasai.

Tujuan: menganalisis perbedaan dan menentukan parameter ultrasonografi abdomen preoperatif yang berpotensi menjadi faktor prediktor terhadap luaran prosedur Kasai pada pasien AB.

Metode: Studi analitik observasional dengan desain *case control* pada pasien AB di RS Sardjito periode 2015–2024. Sampel diambil secara *concecutive non-random sampling* (n=58), terdiri dari kelompok gagal dan berhasil Kasai.

Hasil: Ketebalan *triangular cord sign* (TACS) secara signifikan lebih besar pada kelompok gagal Kasai (2,9±1,2 mm vs. 2,0±0,6 mm, p=0,002). Parameter lain seperti volume VF preandrial, rasio panjang dibanding lebar VF, tipe morfologi VF, *contractility index*, panjang hepar dan lien, echogenitas, echostruktur, serta tepi permukaan hepar tidak menunjukkan perbedaan bermakna. Analisis multivariat menunjukkan bahwa kadar leukosit $\geq 10 \times 10^3/\mu\text{L}$ (*Adjusted OR* 9,045; 95% CI 2,120-38,597; p=0,003) dan peningkatan ketebalan TACS (*Adjusted OR* 3,310; 95% CI 1,454-7,538; p=0,004) merupakan faktor prediktor independen signifikan terhadap kegagalan prosedur Kasai.

Kesimpulan: Ketebalan TACS menunjukkan perbedaan yang bermakna terhadap luaran prosedur Kasai pada pasien atresia bilier. Kadar leukosit preoperatif dan ketebalan TACS merupakan faktor prediktor independen yang signifikan terhadap luaran prosedur Kasai pada pasien atresia bilier.

Kata kunci: atresia bilier, ultrasonografi abdomen preoperatif, portoenterostomi, Kasai, Ketebalan TACS

COMPARISON OF PREOPERATIVE ABDOMINAL ULTRASONOGRAPHY PARAMETERS AS PREDICTIVE FACTORS FOR OUTCOMES OF KASAI PROCEDURE IN BILIARY ATRESIA

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ABSTRACT

Background: Biliary atresia (BA) is a progressive fibroobliterative disorder of the intra- and extrahepatic bile ducts that can lead to cirrhosis and necessitate liver transplantation in children. Hepatic portoenterostomy Kasai is the standard therapy for BA. Several preoperative abdominal ultrasonography parameters may serve as potential predictive factors for the outcomes of the Kasai procedure.

Objective: To analyze the differences and determine preoperative abdominal ultrasonography parameters that could be predictive factors for the outcomes of the Kasai procedure in BA patients.

Methods: An observational analytical study with a case-control design, conducted on BA patients at Sardjito Hospital from 2015 to 2024. The sample was selected using consecutive non-random sampling (n=58), consisting of the failed and successful Kasai groups.

Results: Triangular cord sign (TACS) thickness was significantly greater in the failed Kasai group (2.9±1.2 mm vs. 2.0±0.6 mm, p=0.002). Other parameters, including preprandial gallbladder (GB) volume, GB length to width ratio, GB morphological type, GB contractility index, liver and spleen length, liver echogenicity, echostructure, and surface margin, did not show significant differences. Multivariate analysis revealed that a preoperative leukocyte count $\geq 10 \times 10^3/\mu\text{L}$ (Adjusted OR 9.045; 95% CI 2.120-38.597; p=0.003) and increased TACS thickness (Adjusted OR 3.310; 95% CI 1.454-7.538; p=0.004) were significant independent predictive factors for Kasai procedure failure.

Conclusion: TACS thickness significantly differs with the outcomes of the Kasai procedure in biliary atresia patients. Preoperative leukocyte counts and TACS thickness are independent predictive factors that significantly affect the outcomes of the Kasai procedure in these patients.

Keywords: biliary atresia, preoperative abdominal ultrasonography, portoenterostomy, Kasai, TACS thickness