

INTISARI

Latar Belakang: Atresia biliaris (AB) merupakan penyakit hepar yang serius dengan prognosis yang tidak pasti. Karakteristik AB sebagai suatu obstruksi inflamatori sklerosis kolangiopati duktus biliaris intrahepatal dan ekstrahepatal. Tindakan operasi hepaticoportojejunostomi roux-enY (Kasai) secara signifikan dapat meningkatkan taraf hidup bayi, tetapi prognosis pasien AB masih tidak pasti bahkan sebagian besar pasien masih membutuhkan transplantasi hepar. Terdapat penelitian kesintasan *native liver* tanpa transplantasi hepar signifikan lebih baik bila rasio TB7/TB0 <0,8. Penelitian lain meneliti GGT dan indeks trombosit sebagai faktor prognosis atresia Biliaris pascaKasai. Belum ada penelitian serupa yang dilakukan untuk mengetahui faktor prognostik nilai *cut-off* Total bilirubin (TB), Alanin Transaminase (ALT) dan Gamma Glutamil Transferase (GGT) terhadap kesintasan pascaoperasi Kasai pada pasien atresia biliaris di RSUP Dr. Sardjito.

Tujuan: Menentukan nilai *cut-off* (TB7/TB0), Alanin Transaminase (ALT7/ALT0) dan nilai *cut-off* Gamma Glutamil Transferase (GGT7/GGT0) terhadap kesintasan pascaoperasi Kasai di RSUP Dr. Sardjito.

Metode: Penelitian retrospektif observasional *cross-sectional* menggunakan data rekam medis di RSUP Dr. Sardjito, mulai dari Agustus 2012 s/d Desember 2018 dengan metode *consecutive sampling*. Data tersebut dianalisis menggunakan ROC (*Receiver Operator Curve*) untuk menentukan nilai *cut-off* TB7/TB0, ALT7/ALT0 dan nilai *cut-off* GGT7/GGT0, serta analisis Kaplan-Meier, log-rank, dan *odds ratio* perkiraan kesintasan dengan program Stata Corp Stata dan SPSS 17.

Hasil: Nilai *cut off* TB7/TB0 pada pasien atresia biliaris pascaoperasi Kasai adalah $\geq 0,93$ (sensitivitas 69,23%, spesifisitas 60,61%, *area under curve* 0,627, 95% CI 0,44-0,812, P=0,18) secara klinis menyebabkan 2,2 kali terhadap mortalitas dari analisa Kaplan-Meier dan 3,46 dari analisa *odds ratio* (P=0,103). Nilai *cut off* ALT7/ALT0 adalah $\geq 0,95$ (sensitivitas 53,85%, spesifisitas 54,55%, *area under curve* 0,5851, 95% CI 0,402-0,767, P=0,22) secara klinis menyebabkan 1,98 kali terhadap mortalitas dari analisa Kaplan-Meier dan 1,40 dari analisa *odds ratio* (P=0,746). Nilai *cut off* GGT7/GGT0 adalah $\geq 0,87$ (sensitivitas 53,85%, spesifisitas 45,45%, *area under curve* 0,5012, 95% CI 0,32-0,681, P=0,84) secara klinis menyebabkan 1,11 kali terhadap mortalitas dari analisa Kaplan-Meier dan 0,97 dari analisa *odds ratio* (P=1,00) di RSUP Dr. Sardjito.

Kesimpulan: Faktor prognosis nilai *cut off* rasio TB7/TB0 ($\geq 0,93$) dan ALT7/ALT0 ($\geq 0,95$), GGT7/GGT0 ($\geq 0,87$) terhadap mortalitas tidak signifikan secara statistik, tetapi bermakna secara klinis dari rasio TB7/TB0 dan ALT7/ALT0 terhadap mortalitas pasien AB pascaoperasi Kasai.

Abstract

Background: Many prognostic factors have been reported for the outcomes of biliary atresia (BA) patients after Kasai procedure, however, it still shows a conflicting result. Our study determined the impact of total bilirubin post-operative day 7 and pre-operative ratio (TB7/TB0), gamma-glutamyl transferase post-operative day 7 and pre-operative ratio (GGT7/GGT0), and alanine transaminase post-operative day 7 and pre-operative ratio (ALT7/ALT0) on the survival of BA patients following Kasai surgery.

Methods: We analyzed retrospectively the medical records of BA patients who underwent Kasai procedure at Dr. Sardjito Hospital, Indonesia from August 2012 to December 2018. The cut off values of TB7/TB0, GGT7/GGT0, and ALT7/ALT0 for prediction of patients' survival were determined by receiver operating characteristics (ROC) curves. Log-rank tests and odd ratio were utilized for association between cut off values and overall survival.

Results: The cut off value of TB7/TB0 in patients with postoperative biliary atresia Kasai was $\geq 0,93$ (sensitivity 69,23%, specificity 60,61%, area under curve 0,627, 95% CI 0,44-0,812, $P = 0,18$) clinically caused 2,2 times the mortality from the Kaplan-Meier analysis and 3,46 from the odds ratio analysis ($P = 0,103$). The cut off value of ALT7/ALT0 is $\geq 0,95$ (sensitivity 53,85%, specificity 54,55%, area under curve 0,5851, 95% CI 0,402-0,767, $P = 0,22$) clinically causing 1,98 times the mortality from the Kaplan-Meier analysis and 1,40 from the odds ratio analysis ($P = 0,746$). The cut off value of GGT7/GGT0 is $\geq 0,87$ (sensitivity 53,85%, specificity 45,45%, area under curve 0,5012, 95% CI 0,32-0,681, $P = 0,84$) clinically causing 1,11 times the mortality from the Kaplan-Meier analysis and 0,97 from the odds ratio analysis ($P = 1,00$).

Conclusion: The cut off ratio of TB7/TB0, ALT7/ALT0 of postoperative patients with Kasai biliary atresia is a prognostic factor for the long duration of clinical stay, but not with GGT. Although all three are not statistically significant. Further multicenter studies with a larger sample size are important to clarify our findings.

Keywords: biliary atresia, prognostic factors, Kasai surgery, total bilirubin, Alanin Transaminase, Gamma Glutamyl Transferase