

INTISARI

Latar belakang: Sirosis hati (SH) memiliki morbiditas dan mortalitas tinggi di seluruh dunia. Laporan dari Perhimpunan Peneliti Hati Indonesia (PPHI), rata-rata prevalensi sirosis hati adalah 3,5% dari seluruh pasien penyakit hati yang dirawat. Skor *Model for End-Stage Liver Disease* (MELD) digunakan untuk menilai progresifitas penyakit hati kronis seperti sirosis hati. Pengembangan penanda arginase-1 (ARG-1) sangat diperlukan untuk menghilangkan kesulitan dalam mengikuti perjalanan penyakit yang progresif dari sirosis hati, yang belum banyak diteliti. Tujuan penelitian ini adalah menilai korelasi antara kadar arginase-1 dengan skor MELD pada pasien sirosis hati.

Metode: Penelitian ini menggunakan rancangan observasional potong lintang. Subjek penelitian adalah pasien SH berumur 18 tahun dan menandatangani persetujuan penelitian. Sampel darah dengan antikoagulan natrium sitras untuk pemeriksaan INR dan sampel darah tanpa antikoagulan untuk pemeriksaan bilirubin, kreatinin, dan ARG-1. Pemeriksaan kadar ARG-1 serum menggunakan metode kuantitatif *sandwich Enzyme Linked Immuno Sorbent Assay* (ELISA). Diagnosis SH berdasarkan kriteria klinis, laboratorium, dan *ultrasonography* (USG). Analisis statistik yang digunakan adalah *Kolmogorov Smirnov*, korelasi *Spearman*, *Kruskal Wallis*, dan *Mann Whitney*.

Hasil penelitian: Subjek penelitian adalah 55 pasien SH, rerata umur 55 ± 15 tahun. Dominasi laki-laki sebesar 34 pasien (61,8%), dengan penyebab terbanyak adalah virus hepatitis B sebesar 23 pasien (41,8%). Nilai median skor MELD adalah 14 (6 - 40) dan median kadar arginase-1 adalah 22,4 (12,3 - 44,4) ng/mL. Penanda arginase-1 mempunyai korelasi negatif sedang dengan skor MELD ($r = -0,43$; $p = 0,009$). Pada kelompok skor meld < 10 memiliki median kadar ARG-1 paling tinggi di antara kelompok yang lain (29,99 ng/mL vs 23,55 ng/mL vs 20,20 ng/mL, skor MELD 10-14,9 dan > 15 secara berurutan)

Simpulan: Terdapat korelasi negatif sedang dan bermakna antara kadar arginase-1 dengan skor MELD pada pasien sirosis hati.

Kata kunci: Arginase-1, skor *Model for End-Stage Liver Disease* (MELD), Sirosis Hati.

ABSTRACT

Background: liver cirrhosis (LC) has a high morbidity and mortality in the world. Indonesian Association for the Study of the Liver reported that prevalence average of liver cirrhosis was 3.5% of all treated liver disease patients. Model for End Stage Liver Disease (MELD) score is used for assessing chronic liver disease progressiveness such as cirrhosis of the liver. The development of markers arginase-1 (ARG-1) is very important to eliminate the difficulty in following the journey of a progressive disease of cirrhosis of the liver, which is not been much researched yet. The aim of this study is to assess the correlation between ARG-1 level with MELD score on liver cirrhosis patients.

Methods: It was an observational cross section study. The subject of this study was the liver cirrhosis patient aged 18 years and had signed research agreement. A blood sample with anticoagulant sodium citrate for INR and a blood sample without anticoagulants for bilirubin, creatinin, and ARG-1. The examination of ARG-1 level serum used sandwich Enzyme Linked Immuno Sorbent Assay (ELISA) quantitative method. The diagnosis was based on clinical, laboratories, and ultrasonography (USG) criteria. Statistical analysis used Kolmogorov Smirnov, Spearman correlation, Kruskal Wallis, and Mann Whitney.

Result: This study was conducted to 55 liver cirrhosis patients with average age 55 ± 15 years. Male dominance of 34 patients (61.8%), with the most common causes was hepatitis B virus by 23 patients (41.8%). The median of MELD score was 14 (6-40) and median of ARG-1 level was 22.4 (12.3 – 44.4) ng/mL. Arginase-1 has a moderate negative correlation to MELD score ($r = -0.43$; $p = 0,009$). MELD score <10 group had the highest median level of ARG-1 among other group (29,99 vs. 23,55 vs. 20,20 ng/mL for MELD 10-14,9 and >15, respectively)

Conclusion: There is a moderate negative correlation between arginase-1 level and MELD scores in liver cirrhosis patients.

Keywords: Arginase-1, Model for End-Stage Liver Disease (MELD) score, Liver Cirrhosis