

SKOR AWAL DISSEMINATED INTRAVASCULAR COAGULATION SEBAGAI PREDIKTOR KEMATIAN PADA PASIEN ANAK DENGAN DENGUE SHOCK SYNDROME

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Intisari

Latar belakang. Mortalitas *dengue shock syndrome* (DSS) pada anak masih cukup tinggi yaitu sebesar 12-44%. *Disseminated intravascular coagulation* (DIC) merupakan salah satu faktor risiko yang dapat meningkatkan mortalitas dengan prevalensi sekitar 82%, yang ditandai adanya aktivasi pada jalur koagulasi sistemik. Penilaian skor awal DIC menggunakan sistem skor dari *International Society on Thrombosis and Haemostasis* (ISTH) dapat membantu mendiagnosis dan tatalaksana DIC serta dapat memprediksi kematian pada pasien anak dengan DSS.

Tujuan. Untuk mengetahui apakah skor awal DIC dapat digunakan sebagai prediktor kematian pada anak dengan DSS.

Metodologi penelitian. Penelitian ini adalah studi observasional analitik dengan metode kohort retrospektif. Populasi penelitian adalah anak dengan DSS di RSUP Dr. Sardjito sejak Januari 2017 sampai Juni 2021 yang memenuhi kriteria inklusi yaitu berusia 1 bulan sampai 18 tahun, parameter laboratorium diambil dalam 24 jam pertama sejak terdiagnosis DSS dan kriteria eksklusi yaitu anak dengan kelainan hematologi, faktor koagulasi bawaan dan kelainan hepatobilier. Analisis bivariat dan multivariat dilakukan untuk menentukan hubungan skor awal DIC ≥ 5 dengan luaran kematian. Analisis kesintasan Kaplan-Meier dilakukan untuk mengetahui ketahanan hidup pasien di 6 dan 12 jam pertama sejak pasien terdiagnosis DSS. Analisis data dilakukan dengan SPSS for Window versi 22.

Hasil. Terdapat 158 pasien anak DSS dalam periode penelitian. Tiga puluh empat anak dengan DSS yang dihitung skor awal DIC dianalisis. Jumlah subyek laki-laki 20 (58,8%), usia >5 tahun 24 (76,0%), status gizi baik 21 (61,8%) dengan median *length of stay* 5 hari (3-7). Saturasi oksigen 98% (97-99) dan median tingkat kesadaran pediatric GCS 13. Profil laboratorium median hematokrit 40,9% (32,9-44,9), trombosit 20500 μL (14000-32000), PT 17,8 detik (14,9-25,3), kadar fibrinogen 123 mg/dL (106-184) dan kadar D-dimer 832,5 ng/mL (362-1119). Skor awal DIC ≥ 5 25 (73,5%) dengan luaran kematian sebanyak 9 (36,0%) mempunyai ketahanan hidup sebesar 92% dalam 6 jam pertama. Ketahanan hidup dalam 6 jam setiap komponen DIC berupa trombosit $\leq 50000 \mu\text{L}$ (93,8%), fibrinogen $<100 \text{ mg/dL}$ (100%), D-dimer $\geq 1000 \text{ ng/mL}$ (85,7%).

Kesimpulan. Skor awal DIC ≥ 5 dapat digunakan sebagai prediktor kematian sebesar 8% pada 6 jam pertama setelah terdiagnosis DSS.

Kata kunci: skor awal DIC, dengue shock syndrome, mortalitas, anak

DISSEMINATED INTRAVASCULAR COAGULATION INITIAL SCORE AS A PREDICTOR OF MORTALITY IN CHILDREN WITH DENGUE SHOCK SYNDROME

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Abstract

Background. The mortality of dengue shock syndrome (DSS) in children is still high at 12-44%. Disseminated intravascular coagulation (DIC) is one of the risk factors that can increase mortality with a prevalence around 82% which is characterized by activation of the systemic coagulation pathway. Assessment of the initial DIC score using the International Society on Thrombosis and Haemostasis (ISTH) score can help to diagnose and treat DIC and can predict mortality in pediatric patients with DSS.

Objective. To investigate the initial DIC score can be used as a predictor of mortality in children with DSS

Method. This is a retrospective cohort study with an analytic observational design. Children with DSS at Dr. Sardjito Hospital between January 2017 and June 2021 with inclusion criteria, age 1 month to 18 years, laboratory parameters taken within first 24 hours after DSS workup and children with hematological disorders, congenital coagulation factors, and hepatobiliary disorders, were excluded. The relationship between initial DIC score ≥ 5 and mortality were analyzed using bivariate and multivariate analysis. The patient's survival in the first 6 and 12 hours after being diagnosed with DSS was examined using Kaplan-Meier survival analysis. SPSS for Windows version 22 has been used to analyze data.

Result. Analysis of initial DIC scores taken from the thirty-four children with DSS was performed. Results showed a sample population consisting of 20 male subjects (58.8%), 24 aged >5 years (76.0%), 21 with good nutritional status (61.8%), and with a median length of stay of 5 days (3-7). Saturation of 98% (97-99) and median pediatric glasgow coma scale, level of consciousness 13. The laboratory profile median showed levels of hematocrit at 40.9% (32.9-44.9), platelets at 20500 /L (14000-32000), PT of 17.8 seconds (14.9-25.3), fibrinogen at 123 mg/dL (106-184) and D-dimer at 832.5 ng/mL (362-1119). An initial DIC score of ≥ 5 (73.5%) resulted with a mortality of 9 children (36.0%) with a 92% survival rate in the first 6 hours. The first 6-hour survival according to each DIC score parameter showed 93.8%, 100%, 85.7%, 94.1% from platelets ≤ 50000 μ L, fibrinogen <100 mg/dL, D-dimer >1000 ng/mL, and PT >6 seconds respectively.

Conclusion. An initial DIC score ≥ 5 can be predicting mortality around 8% in the first 6 hours after diagnosed.

Keyword. initial DIC score, dengue shock syndrome, mortality, children