Kinetika trombosit sebagai prediktor renjatan pada demam berdarah dengue anak: analisis survival = Kinetic of thrombocyte as predictor of shock in children with dengue hemorrhagic fever: survival analysis

M. Sopiyudin Dahlan, author

Abstrak

Tujuan : Untuk mengetahui apakah trombosit dan kovariat lainnya yaitu jenis kelamin, usia, lama saklt, perdarahan, status gizi, hepatomegali, hematokrit, dan leukosit merupakan prediktor terjadinya renjatan pada pasien demam berdarah dengue (DBD) anak. Desain : kohort retrospektif dcngan analisis survival di dua rumah sakit di Jakarta. Penentuan tilik potong untuk trombosit, leukosit, dan hematokrit berdasarkan lama sakit menggunakan metode receiver operating characleristic (ROC). Nilai diskriminasi model prediksi menggunakun parameter area under curve (AUC). Subyek : Pasien suspek DBD, derajat I-Il, tanpa penyakit penyerta, lama sakit 3-5 hari. Keluaran utama: I-lubungan antara trombosit dengan renjatan dan model prcdiksi renjatan DBD pada awal perawatan dan 24jam perawatan. Hasil : Telah direkrut sebanyak 525 subyek dari catatan medis rumah sakit. Insidens renjatan sebesar 6,l%. Titik potong trombosit awal perawatan dengan lama sakit 3, 4 dan 5 hari musing-masing adalah 81.500/ul, 59.500/ul dan 53.500/ul. Titik potong trombosit 24 jam perawatan dengan lama sakit 4, 5 dan 6 hari masing-masing adalah 59.500/ul, 53.500/ul, dan 45.000/ul. Baik trombosit awal perawatan maupun 24 jam perawatan berhubungan dengan teijadinya renjatan dengan hazard ratio masing-masing sebesar 3,5 (lK95% 1,5-8,4) dan 3,3 (lK95% 1,4-7,5). Nilai diskriminasi trombosit awal perawatan dan 24 jam perawatan musing-masing sebesar 72,3% (IK 95% 63,1-8l,6) dan 67,'7% (IK 95% 58,2-‘77,3). Trombosit bersama-sama dengan karakteristik klinis rumah sakit, perdarahan, status gizi, interaksi lama sakit dengan hematokrit, dan interaksi lama sakit dengan hepatomegali baik pada awal perawatan maupun 24 jam perawatan merupakan prediktor lerjadinya renjatan. Model prediksi pada awal pcrawatan dan 24 jam perawatan mempunyai nilai kalibrasi yang baik dan nilai diskriminasi yang baik dengan AUC sebesar 84,l%; lK95% 77,9-90,3 untuk awal perawatan dan 80,4% (IK 95% 72,4-88,4) untuk 24 jam perawatan. Nilai diskriminasi model prcdiksi ini lebih baik daripada nilai diskriminasi trombosit awal perawatan maupun 24jam perawatan. Kesimpulan dan saran: Trombosit merupakan prediktor terjadinya renjatan pada DBD anak akan letapi penggunaan trombosit sebagai prediktor renjatan akan lebih balk jika digunakan bcrsama-sama dengan parameter Iainnya yaitu perdarahan, status gizi, hepatomegali, dan hematokrit. Saran: Perlu dilakukan penelitian lanjutan untuk mengetahui reproducibilizjv dan rransporrability model prediksi renjatan yang diperoleh dalam penelitian ini.

.....Purpose: to investigate whether thrombocyte and other covariate such as sex, age, time before admission, bleeding, nutritional status, hepatomegali, haematocrit, and leukocyte, can be used to predict shock at children with dengue hemorrhagic fever (Di-IF). Design: Retrospective cohort with survival analysis. Cit off point for thrombocyte, leukocyte. and haematocrit according to day of sick were determined by receiver operating characteristic (ROC) curve. Magnitude of discrimination was assessed by area under curve (AUC). Subject: Children suspected with DH F, grade l and II at admission. Main outcome: to know association between thrombocyte with shock and to know prediction model to predict shock at admission and 24 hours after admission. Result: There were 525 subjects. Incident of shock was 6.l%. Cut off point for thrombocyte according to long of sick at 3, 4 and 5 day were 81.500/ul, 59.500/ul and 53,500/ul

respectively. Cut olT point for thrombocyle at 24 hours aller admission ut 4, S, and 6 day were 59.500/ul, 53,500/ul, and 45,000/ul respectively. Both thrombocyte at admission and 24 hours after admission had association with shock with hazard ratio 3.5 (95%Cl l.5-8.4) and 3.3 (95Cl% i.4-7.5) respectively with magnitude of discrimination were 72.3% (95Cl% 63.1-8l.6) and 67.7% (95%Cl 58.2-77.3) respectively. Thrombocyte together with clinical characteristic of hospital, bleeding, nutritional status,interaction between time before admission and hepatomegali, interaction between time before admission and haematocrit were significant variables to include in to the prediction model for shock both for admission and 24 hours after. These models had good calibration and discrimination with magnitude of discrimination were 84.l%; lK95% 77.9-90.3 and 80.4% (95%Cl 72.4-88.4) respectively. Discrimination of tlicse models was higher than discrimination of thrombocyte alone. Conclusion: Thrombocyte is a predictor of shock but using prediction models consist of thrombocyte and other variables such as bleeding, nutritional status, hepatomegali, haematocrit is better to predict shock than thrombocyte alone. Suggestion: To conduct further research to investigate reproducibility and transportability of these prediction models.