

PERFORMA SKORING SIMPLE MODIFIKASI DALAM MENDIAGNOSIS *HEMODINAMICALLY SIGNIFICANT PDA* PADA BAYI PREMATUR

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Intisari

Latar belakang. *Hemodinamically significant patent ductus arteriosus* (hsPDA) merupakan salah satu penyakit jantung bawaan yang menyebabkan gangguan hemodinamik pada bayi prematur. Ekokardiografi merupakan baku emas diagnosis hsPDA yang perlu dioperasikan oleh dokter terlatih. Skoring SIMPLE terdiri dari 14 variabel kombinasi faktor risiko, indikator klinis dan analisis gas darah (AGD). Dokter dapat menggunakan skoring SIMPLE untuk mendiagnosis dini hsPDA tanpa ekokardiografi. Keterbatasan penggunaan AGD membuat skoring SIMPLE perlu dimodifikasi tanpa parameter AGD menjadi 11 variabel

Tujuan. Menilai performa sensitivitas dan spesifisitas skoring SIMPLE modifikasi dibandingkan dengan ekokardiografi dalam mendiagnosis hsPDA pada bayi prematur.

Metode. Studi potong lintang dilakukan di NICU RSUP Dr. Sardjito sejak 1 Januari 2017 – 30 April 2022. Bayi lahir hidup dengan usia gestasi < 32 minggu yang berusia < 7 hari diikutsertakan dalam studi dengan cara *consecutive sampling*. Data sekunder diambil dari rekam medis. Penentuan *cut off* optimal skoring menggunakan *Youden index* dari ROC. Analisis performa skoring SIMPLE modifikasi dibandingkan dengan ekokardiografi menggunakan tabel kontingensi dan AUC. Tingkat presisi luaran hasil ditunjukkan oleh interval kepercayaan 95%.

Hasil. Seratus tiga sampel yang terdiri dari 38 bayi (36,9%) terdiagnosis hsPDA dan 65 bayi (61,1%) tidak hsPDA diambil dalam penelitian ini. Sampel terbanyak (51,5%) merupakan bayi berat lahir sangat rendah dengan median usia gestasi 29 minggu dan rerata berat lahir 1111 gram. Skoring SIMPLE modifikasi dengan *cut off* optimal ≥ 7 memiliki performa sensitivitas 84,2%, spesifisitas 70,7%, nilai ramal positif 62,7% dan nilai ramal negatif 88,4%.

Kesimpulan. Skoring SIMPLE modifikasi dengan total nilai < 7 memiliki performa yang cukup baik dalam mengeksklusi diagnosis hsPDA tanpa ekokardiografi pada bayi prematur.

Kata kunci. Performa diagnosis, skoring, hsPDA, tanpa ekokardiografi, bayi prematur

PERFORMANCE OF MODIFIED SIMPLE SCORING TO DIAGNOSE *HEMODYNAMICALLY SIGNIFICANT PDA* in PRETERM BABY

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Abstract

Background. Hemodinamically significant patent ductus arteriosus (hsPDA) is common congenital heart disease causing hemodynamic disturbance in preterm babies. Echocardiography as the gold standard to diagnose hsPDA is necessarily operated by trained medical doctor. SIMPLE scoring consists of 14 combined variables of risk factors, clinical findings and blood gas analysis. Medical doctor might use SIMPLE scoring for early diagnose of hsPDA without echocardiography. Due to limitation of using blood gas analysis, SIMPLE scoring has to be modified into using 11 variables excluding blood gas analysis parameter.

Objective. Assess the sensitivity and specificity of modified SIMPLE scoring compared to echocardiography for diagnosing hsPDA in preterm baby.

Method. A cross-sectional study was conducted in NICU Dr. Sardjito Hospital from 1st January 2017 to 30th April 2022. Preterm babies with < 32 week of gestational age whose age is < 7 days were enrolled to study by consecutive sampling method. Secondary data were collected from medical record. Youden index of ROC was used to determine optimal cut off of the modified SIMPLE scoring. Diagnostic performance analysis was made by table contingency counting and AUC which had compared the scoring to echocardiographic findings. Precision of results were presented as 95% confidence interval.

Result. Total of 103 samples which consist of 38 babies with hsPDA (36.9%) and 65 babies without hsPDA (61.1%) were enrolled in this study. Most of the samples were very-low-birth weight babies (51.5%) whose median of gestational age was 29 weeks and mean of birth weight was 1111 gram. The best sensitivity value and specificity value of the modified SIMPLE scoring were 84.2% and 70.7% with cut off ≥ 7 .

Conclusion. Modified SIMPLE scoring with cut off < 7 has good performance to exclude diagnosis of hsPDA without echocardiography in preterm baby.

Keyword. Diagnostic performance, scoring, hsPDA, without echocardiography, preterm baby