

Red-blood Cell Distribution Width (RDW) dan Mean Platelet Volume (MPV)
Sebagai Faktor Prognostik Mortalitas Pada Pasien *Pediatric Acute Respiratory Distress Syndrome* (PARDS)

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INTISARI

Latar belakang: *Pediatric acute respiratory distress syndrome* (PARDS) merupakan problem kesehatan global yang menyebabkan gagal nafas pada pasien sakit kritis. Angka kematian dan angka kesakitan pasien PARDS masih tinggi terutama di negara berkembang. PARDS ditandai dengan kerusakan alveolar difus berupa edema, inflamasi, pembentukan membran hialin dan fibrosis paru. Sampai saat ini, belum ada penanda laboratorium spesifik untuk PARDS. Beberapa penanda yang telah diteliti adalah *red-blood cell distribution width* (RDW) dan *mean platelet volume* (MPV).

Tujuan: Untuk mengetahui apakah RDW dan MPV dapat digunakan sebagai faktor prognostik dalam menentukan mortalitas pasien PARDS.

Metode: Penelitian dilakukan secara kohort retrospektif pada pasien PARDS yang dirawat di PICU RS Sardjito pada periode 1 Januari 2018 hingga 31 Desember 2022. Data sekunder dari rekam medis dianalisis dengan analisis bivariat dilanjutkan dengan analisis multivariat dengan regresi logistik untuk menentukan prediktor mortalitas pada PARDS.

Hasil: Diperoleh 197 pasien PARDS, sebanyak 63 pasien diambil sebagai subjek penelitian. Hasil analisis multivariat menunjukkan RDW tinggi ($p=0,009$, OR 5,411, CI 95% 1,513-19,356) dan MPV tinggi ($p=0,049$, OR 4,094, CI 95% 1,003-16,715) merupakan prediktor mortalitas pada PARDS.

Kesimpulan: Nilai RDW tinggi dan MPV tinggi merupakan faktor prediktor mortalitas pada pasien PARDS.

Kata kunci: PARDS, mortalitas, RDW, MPV

**Red-blood Cell Distribution Width (RDW) and Mean Platelet Volume (MPV)
As Prognostic Factors of Mortality in Pediatric Acute Respiratory Distress
Syndrome (PARDS) Patients**

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ABSTRACT

Background: Pediatric acute respiratory distress syndrome (PARDS) is a global health problem that causes respiratory failure in critically ill patients. The morbidity and mortality rates of PARDS patients are still high, especially in developing countries. PARDS is characterized by diffuse alveolar damage in the form of edema, inflammation, hyaline membrane formation and pulmonary fibrosis. To date, there are no specific laboratory markers for PARDS. Some markers that have been studied are red-blood cell distribution width (RDW) and mean platelet volume (MPV).

Objective: To determine whether RDW and MPV can be used as prognostic factors in determining the mortality of PARDS patients.

Methods: The study was conducted retrospectively in PARDS patients admitted to the PICU of Sardjito Hospital in January 1st, 2018 to December 31th, 2022. Secondary data from medical records were analyzed by bivariate analysis and followed by multivariate analysis with logistic regression to determine predictors of mortality in PARDS.

Results: 197 PARDS patients were obtained, 63 patients were taken as research subjects. Analysis showed high RDW ($p=0.009$, OR 5.411, CI 95% 1.513-19.356) and high MPV ($p=0.049$, OR 4.094, CI 95% 1.003-16.715) were predictors of mortality in PARDS.

Conclusion: High RDW and high MPV value are predictors of mortality in PARDS patients.

Keywords: PARDS, mortality, RDW, MPV