



## INTISARI

**Pendahuluan:** Pada Desember 2019, muncul penyakit infeksi baru yang disebabkan oleh virus corona bernama SARS-CoV-2. Penyakit COVID-19 mengakibatkan kegagalan multiorgan yang terjadi di paru dan ekstraparu, sepsis, bahkan kematian. Gangguan paru yang sering terjadi pada pasien COVID-19 adalah ARDS. Pengenalan dini ARDS dapat dilakukan dengan menilai kondisi klinis pasien dan parameter RR dan SpO<sub>2</sub>. Indeks ROX adalah suatu penghitungan (SpO<sub>2</sub>/FiO<sub>2</sub>)/RR. Indeks ROX berpotensi menjadi salah satu prediktor mortalitas pasien COVID-19.

**Tujuan:** Mengetahui hubungan indeks ROX dengan mortalitas pasien COVID-19 di RSUP Dr. Sardjito.

**Metode:** Penelitian observasional dengan pendekatan kohort retrospektif terhadap pasien COVID-19 yang dirawat inap di RSUP Dr. Sardjito pada bulan Juli 2020 sampai Juni 2021. Pasien COVID-19 tanpa terapi oksigen atau dengan terapi oksigen nasal kanul, NRM, atau HFNC yang dirawat inap, dihitung Indeks ROX pada hari pertama perawatan lalu dinilai mengenai hubungan indeks ROX dengan mortalitas pasien dan lama rawat di rumah sakit. Data diambil dari rekam medis di Instalasi Catatan Medis di RSUP Dr. Sardjito.

**Hasil:** Didapatkan 953 subjek penelitian dengan rata-rata usia 51 ( $\pm$  15,5) tahun, wanita 479 (50,3%) dan pria 474 (49,7%). Terdapat hubungan bermakna antara indeks ROX  $\leq$  15,06 dengan mortalitas pasien COVID-19 ( $p < 0,001$ , HR=2,15, CI 95% 1,57-2,94). Faktor lain yang berkaitan dengan mortalitas pasien COVID-19 adalah usia, terapi oksigen dengan HFNC, hipertensi, diabetes melitus, gagal ginjal kronis, dan penyakit kardiovaskular. Waktu ketahanan hidup subjek dengan indeks ROX  $\leq$  15,06 adalah 24 hari ( $p < 0,001$ ). Rerata lama rawat inap pada kelompok indeks ROX  $\leq$  15,06 lebih lama dibandingkan kelompok indeks ROX  $>$  15,06 ( $p=0,002$ ). Faktor yang berhubungan dengan lama rawat adalah usia  $\geq$  65 tahun, riwayat hipertensi dan diabetes melitus. Hanya terapi oksigen yang memiliki hubungan bermakna dengan indeks ROX.

**Kesimpulan:** Terdapat hubungan bermakna indeks ROX dengan mortalitas pasien COVID-19 di RSUP Dr. Sardjito

**Kata kunci:** COVID-19, indeks ROX, lama rawat, dan mortalitas.



## **ABSTRACT**

**Introduction:** *In December 2019, a new infectious disease caused by a corona virus named SARS-CoV-2 emerged. COVID-19 disease causes multi-organ failure that occurs in the lungs and extra-pulmonary, sepsis, and even death. Pulmonary disorders that often occur in COVID-19 patients are ARDS. Early recognition of ARDS can be done by assessing the clinical condition of the patient and the parameters of RR and SpO<sub>2</sub>. ROX is a calculation of Index (SpO<sub>2</sub>/FiO<sub>2</sub>)/RR. The ROX index may be one of the predictors of mortality in COVID-19 patients.*

**Objective:** *To determine the relationship between the ROX index and mortality of COVID-19 patients at Dr. Sardjito General Hospital.*

**Methods:** *An observational study with a retrospective cohort approach to COVID-19 patients who were hospitalized at Dr. Sardjito General Hospital in July 2020 to June 2021. Patients with COVID-19 without oxygen therapy or with nasal cannula oxygen therapy, NRM, or HFNC who were hospitalized, the ROX Index were calculated on the first day of treatment and then assessed for patient mortality and length of stay. The data was taken from medical records at the Medical Records Installation at Dr. Sardjito General Hospital.*

**Results:** *There were 953 research subjects with an average age of 51 ( $\pm$  15.5) years old, 479 women (50.3%) and 474 men (49.7%). There was a significant relationship between the ROX index 15.06 and the mortality of COVID-19 patients ( $p < 0.001$ , HR = 2.15, 95% CI 1.57-2.94). Other factors related to mortality in COVID-19 patients were age, oxygen therapy with HFNC, hypertension, diabetes mellitus, chronic kidney failure, and cardiovascular disease. The survival time of subjects with an ROX index of 15.06 was 24 days, shorter than the index group  $> 15.06$ , which was 31 days ( $p < 0.001$ ). Factors related to length of stay were age  $\geq 65$  years, history of hypertension and diabetes mellitus. Only oxygen therapy had a significant relationship with the ROX index.*

**Conclusion:** *There was a significant relationship between the ROX index and the mortality of COVID-19 patients at Dr. Sardjito General Hospital.*

**Keywords:** *COVID-19, length of stay, mortality and ROX index.*