INTISARI

Latar belakang: Kematian akibat COVID-19 masih cukup tinggi di berbagai wilayah menjadi fokus perawatan saat pandemi COVID-19. Identifikasi faktor risiko kematian sangat penting dalam upaya pencegahan kematian pasien COVID-19. Peningkatan respon inflamasi berhubungan dengan risiko kematian pada pasien COVID-19. Peningkatan kadar IL-6 berkorelasi positif dengan peningkatan replikasi virus dan persistensi infeksi virus. Hasil penelitian IL-6 dan hubungannya dengan kematian pada COVID-19 bervariasi di berbagai negara. Peran IL-6 sebagai faktor prognosis kematian pasien COVID-19 khususnya di RSUP Dr. Sardjito, Yogyakarta belum banyak diteliti.
Tujuan: untuk mengetahui kemampuan IL-6 dengan *cut off* > 80 pg/mL sebagai faktor prognosis dalam memprediksi kematian pasien COVID-19 di RSUP Dr. Sardjito Yogyakarta.
Metode: Penelitian observasional kohort retrospektif ini dengan kriteria inklusi: pasien COVID-19 di RSUP Dr. Sardjito yang terkonfirmasi melalui RT-PCR, usia ≥ 18 tahun, dan memiliki data pemeriksaan IL-6 pada hari pertama kunjungan. Kriteria eksklusi: pasien HIV, kehamilan, penggunaan obat imunosupresan dan data yang tidak lengkap. Hasil data pemeriksaan IL-6 dengan *cut off* > 80 pg/mL ditetapkan sebagai faktor risiko. Luaran klinis pasien berdasarkan data rekam medis berupa meninggal atau bertahan hidup dicatat dengan maksimal pengamatan 30 hari pasca kunjungan hari pertama. Risiko kematian dianalisis dengan uji *chi square* dan perhitungan risiko relatif dengan menggunakan *software SPSS versi 25* dengan kemaknaan p<0,05.
Hasil: Penelitian ini melibatkan 181 subjek yang memenuhi kriteria inklusi dan eksklusi. Sebanyak 62 subjek (34,3%) meninggal dalam waktu 30 hari. Median usia subjek penelitian adalah 55 tahun dengan rentang 18 - 88 tahun. Pasien laki-laki lebih banyak dibandingkan perempuan (62,4% vs 37,6%). Terdapat perbedaan yang bermakna pada parameter jumlah leukosit, jumlah netrofil absolut, jumlah limfosit absolut, dan nilai NLR antara kelompok terpapar dan tidak terpapar. Hasil analisis kesintasan IL-6 pada penelitian ini dengan nilai risiko relatif (RR) 5,31 (IK95% 3,17-8,90, *p*<0,001) merupakan prediktor independen kematian pasien COVID-19 di rumah sakit.
Simpulan: Penelitian ini membuktikan bahwa IL-6 dapat digunakan sebagai faktor prognosis dalam memprediksi kematian pasien COVID-19 di RSUP Dr. Sardjito Yogyakarta.
Kata kunci: COVID-19, interleukin-6 (IL-6), faktor prognosis, kematian

ABSTRACT

Background: Mortality from COVID-19 is still relatively high in various regions and is the focus of treatment during the COVID-19 pandemic. Identification of risk factors for death is crucial in efforts to prevent the death of COVID-19 patients. Increased IL-6 levels are positively correlated with increased viral replication and persistence of infection. Research results on IL-6 and its relationship to mortality in COVID-19 vary across countries. The role of IL-6 as a prognostic factor for the death of COVID-19 patients, especially at Dr. Sardjito, Yogyakarta, has not been studied much.
Aims: This study aims to examine the ability of IL-6 with a cut-off of > 80 pg/mL as a prognostic factor in predicting the mortality of COVID-19 patients.
Methods: This retrospective cohort observational study with inclusion criteria: COVID-19 patients at Dr Sardjito whom RT-PCR confirmed, aged ≥ 18 years, and had IL-6 examination data on the first day of the visit, with exclusion criteria are HIV patients, pregnancy, use of immunosuppressant drugs, and incomplete data. The results of the IL-6 examination data with a cut-off of > 80 pg/mL are defined as risk factors. Clinical outcomes of patients based on medical record data in the form of non-survival or survival are recorded with a maximum of 30 days of observation after the first visit. The mortality risk was analyzed using relative risk with a significance $p<0.05$.
Results: This study involved 181 subjects who met the inclusion and exclusion criteria. A total of 62 subjects (34.3%) died within 30 days. The median age of the study subjects was 55 years, ranging from 18 to 88 years. There were more male than female patients (62.4% vs. 37.6%). Significant differences existed in the leukocyte count, absolute neutrophil count, absolute lymphocyte count, and NLR values between the exposed and unexposed groups. The results of the IL-6 survival analysis in this study, with a relative risk (RR) value of 5,31 (IK95% 3,17-8,90, $p<0,001$), are independent predictors of death in COVID-19 patients in hospitals.
Conclusion: This study proves that IL-6 can be used as a prognostic factor in predicting the death of COVID-19 patients.

Keywords: COVID-19, interleukin-6, prognostic factors, mortality