KORELASI KADAR D-DIMER TERHADAP GAMBARAN RADIOGRAFI TORAKS PNEUMONIA COVID-19

INTISARI

Latar Belakang. Novel Cororonavirus Disease 2019 (COVID-19) telah berkembang menjadi pandemi dengan angka kematian tinggi dan perkembangan penyakit yang sulit diprediksi. Penentuan derajat keparahan pneumonia COVID-19 sangat penting dalam penentuan tatalaksana, dengan pemeriksaan kadar D-dimer yang telah dipulikasikan sebagai faktor prediktor independen keparahan penyakit. Selain itu diperlukan modalitas pencitraan radiologi yang efektif dan efisien baik dalam penilaian awal maupun evaluasi perkembangan penyakit.

Tujuan. Mengetahui korelasi kadar D-dimer terhadap gambaran radiografi toraks pneumonia COVID-19

Bahan dan Metode. Penelitian ini merupakan studi analitik observasional, desain cross-sectional, dengan sampel hasil pemeriksaan radiografi toraks (CXR) pasien dewasa pneumonia COVID-19. Pengambilan sampel dilakukan secara *consecutive non-random* pada April 2020 hingga Agustus 2021. Penilaian derajat pneumonia dengan *Brixia score*, kemudian dilakukan uji korelasi terhadap kadar D-dimer dari hasil pemeriksaan laboratorium.

Hasil. Data pemeriksaan dari 60 pasien, dengan perbandingan 53,3% pria dan 46,7% wanita, rerata usia 53,77 tahun, rerata Brixia score 12,93 dan rerata D-dimer 1338,83 ng/mL. Proporsi pasien dengan komorbid 65% pasien tanpa komorbid 35%, dengan hasil luaran 86,7% pasien sembuh dan 13,3% pasien meninggal. Hasil uji korelasi D-dimer terhadap *Brixia score* didapatkan hasil korelasi positif dengan koefisien korelasi (r) sebesar 0,288 (p = 0,026).

Kesimpulan. Terdapat korelasi positif lemah kadar D-dimer terhadap gambaran CXR pneumonia COVID-19 berdasarkan *Brixia score*.

Kata Kunci: *Brixia score*, D-dimer, COVID-19, CXR

CORRELATION OF D-DIMER LEVEL TO COVID-19 PNEUMONIA SEVERITY IN CHEST X-RAY IMAGING

ABSTRACT

Background. Novel Cororonavirus Disease 2019 (COVID-19) had escalated to global pandemic with high mortality and unpredictable disease progression. Assessment of COVID-19 pneumonia severity had been the main concern in patient management, whereas D-dimer level had been published as independent predictors for disease severity. Furthermore, effective and efficient radiological imaging modalities required for the initial assessment and evaluation of disease progression.

Objectives. To evaluate the correlation of D-dimer level to the severity of COVID-19 pneumonia based on chest x-ray (CXR) imaging.

Materials and Methods. This research is an observational, cross-sectional study. Samples of CXR from adult COVID-19 patients were taken consecutively from April 2020 to August 2021. Severity of pneumonia was assessed using Brixia score. Statistical analysis then conducted to evaluate the correlation of D-dimer to the severity of COVID-19 pneumonia.

Results. In total of 60 patients, 53,3% men and 46,7% women, mean age 53,77 years, mean of Brixia score 12,93 and D-dimer level 1338,83 ng/mL. Proportion of patients with comorbid factors 65% and 35% without comorbid factors, as the patient outcome 86,7% recovered and 13,3% deaths. Spearman correlation test result showed significant positive correlation of D-dimer level and Brixia score ($r = 0,288$; $p = 0,026$).

Conclusion. D-dimer level had weak positive correlation to the severity of COVID-19 pneumonia based on CXR imaging.

Keywords: Brixia score, CXR, D-dimer, COVID-19