

KORELASI GAMBARAN BRIXIA SCORE DAN HASIL LABORATORIUM KLINIS PADA PASIEN COVID-19 DERAJAT BERAT-KRITIS YANG MENDAPATKAN TERAPI STANDAR DIBANDINGKAN TOCILIZUMAB

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ABSTRAK

Latar belakang. World health organization (WHO) menyatakan bahwa *coronavirus infection disease 19* (COVID-19) menjadi masalah kesehatan internasional. Penegakan diagnosis definitif dari COVID-19 berdasarkan pemeriksaan *real-time reverse transcriptase polymerase chain reaction* (RT-PCR), sedangkan pemeriksaan radiologi memiliki peran penting dalam mendeteksi gambaran awal pneumonia, memberikan tingkat keparahan, progresivitas penyakit hingga control pasca infeksi. Penilaian derajat keparahan pneumonia pada COVID-19 dapat dinilai dengan Brixia score pada foto toraks dan peningkatan marker inflamasi. Sebagian besar kematian pada pasien COVID-19 terjadi pada fase berat-kritis, sehingga fase ini yang menjadi perhatian utama para klinisi pada tatalaksana COVID-19 untuk menurunkan angka mortalitas pasien. Terapi standar pada COVID-19 derajat sedang hingga berat adalah plasma konvalesen yang berfungsi sebagai antivirus dan imunomodulator, sedangkan tocilizumab adalah antagonis IL-6.

Tujuan. Mengetahui korelasi gambaran brixia score dan hasil laboratorium klinis pada pasien covid-19 derajat berat-kritis baik yang mendapatkan terapi standar maupun tocilizumab

Metode. Penelitian kohort retrospektif terhadap nilai brixia score, dengan hasil laboratorium klinis berupa D-dimer, fibrinogen, ferritin, dan CRP (*C-reactive protein*) pasien COVID-19 derajat berat-kritis yang diberikan terapi standar dan tocilizumab yang dirawat di RSUP DR Kariadi Semarang, kemudian dilakukan korelasi antara brixia score dengan hasil laboratorium klinis menggunakan uji korelasi *Spearman*.

Hasil. Data penelitian sebanyak 72 dibagi menjadi kelompok yang diberi terapi tocilizumab (36) dan terapi standar (36). Didapatkan korelasi bermakna brixia score dengan hasil D-dimer dengan nilai $p=0.024$ ($p<0.05$) koefisien korelasi = 0.377 pada kelompok terapi standar pre terapi, nilai $p=0.314$ ($p<0.05$) dan koefisien relasi = 0.359 setelah terapi. Tidak terdapat korelasi bermakna antara Brixia score dengan hasil laboratorium klinis pada sebelum maupun sesudah terapi tocilizumab.

Simpulan. Terdapat korelasi bermakna hasil brixia score dengan hasil D-dimer pada penderita COVID-19 yang diberikan terapi standar.

Kata kunci: COVID-19, Brixia score, tocilizumab, plasma konvalesen.

CORRELATION OF BRIXIA SCORE AND CLINICAL LABORATORY RESULTS IN SEVERE-CRITICAL COVID-19 PATIENTS RECEIVING STANDARD THERAPY COMPARED TO TOCILIZUMAB

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ABSTRACT

Background. World Health Organization (WHO) states that *coronavirus infection disease 19* (COVID-19) is a global health problem. Definitive diagnosis of COVID-19 based on *real-time reverse transcriptase polymerase chain reaction* (RT-PCR). Radiological examination has an essential role in detecting the initial features of pneumonia, providing the level of severity, and disease progression to post-infection control. Assessment of the severity of pneumonia in COVID-19 can be assessed by the Brixia score on chest X-ray and increased inflammatory markers. Most of the deaths in COVID-19 patients occur in the severe-critical phase, so this phase become the main concern of clinicians in the management of COVID-19 to reduce patient mortality. Standard therapy for moderate to severe COVID-19 is convalescent plasma which functions as an antiviral and immunomodulator, while tocilizumab is an IL-6 antagonist which underlies the occurrence of cytokine storms in severe-critical COVID-19.

Objective. Knowing the correlation between the Brixia score and clinical laboratory results in patients with severe-critical degree Covid-19 who received both standard therapy and tocilizumab

Method. A retrospective cohort study of Brixia score, with clinical laboratory results of D-dimer, fibrinogen, ferritin, and CRP (*C-reactive protein*) COVID-19 patients with severe-critical phase who were given standard therapy and tocilizumab who were treated at RSUP DR Kariadi Semarang, then a correlation was carried out between the Brixia score and clinical laboratory results using a correlation test *Spearman*.

Results. The research data consisted of 72 divided into groups that were given tocilizumab therapy (36) and standard therapy (36). There was a significant correlation between the Brixia score and the D-dimer result with $p = 0.024$ ($p < 0.05$) correlation coefficient = 0.377 in the standard pre-therapy group, $p = 0.314$ ($p < 0.05$) and correlation coefficient = 0.359 after therapy. There was no significant correlation between Brixia score and clinical laboratory results before or after tocilizumab therapy.

The knot. There is a significant correlation between the Brixia score results and the D-dimer results in COVID-19 patients who are given standard therapy.

Keywords: COVID-19, Brixia score, tocilizumab, convalescent plasma.