

AKURASI CT TORAKS TANPA KONTRAS PADA DIAGNOSIS PNEUMONIA COVID-19 DAN NON-COVID-19 BERDASARKAN TEMUAN *GROUND-GLASS OPACITIES*

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INTISARI

Latar Belakang: Pneumonia merupakan salah satu penyebab kematian akibat infeksi terbanyak dengan insidensi di negara berkembang mencapai 5 (lima) kali lebih banyak dibandingkan di negara maju. Pneumonia dapat disebabkan oleh virus, bakteri, maupun sebab lainnya. *CT scan* toraks tanpa kontras memiliki sensitivitas cukup tinggi namun spesifitas rendah dalam diagnosis COVID-19 sehingga membutuhkan pemahaman dan pengetahuan dalam membedakan penyebab pneumonia berdasarkan gambaran GGO yang tampak.

Tujuan penelitian ini adalah untuk mengetahui akurasi diagnostik pemeriksaan *CT scan* toraks tanpa kontras dalam membedakan pneumonia COVID-19 dan non-COVID-19 berdasarkan temuan *ground-glass opacities*.

Metode: Merupakan penelitian observasional *cross-sectional*, dengan pengambilan data citra *CT scan* toraks tanpa kontras secara retrospektif. Sampel diambil dari data citra CT scan toraks tanpa kontras pasien dengan diagnosis klinis pneumonia yang telah dilakukan pemeriksaan RT-PCR, pemeriksaan hematologi dan/atau pemeriksaan kultur sputum/ darah untuk menentukan penyebab pneumonia di bulan September 2020 hingga bulan September 2021. Data dianalisis menggunakan IMB SPSS 26 dan **dan MedCalc** (<https://www.medcalc.org/>) untuk dilakukan uji diagnostik

Hasil: Total sampel 103 pasien, terdiri dari 64 laki-laki dan 39 perempuan; dengan kelompok usia terbanyak 61-75 tahun. Didapatkan nilai sensitivitas sebesar 100% ((95%CI: 92,45%-100%), spesifitas 69,64% (95%CI: 55,90%-81,22%), NPP 73,44% (95%CI: 65,03%-80,43%), NPN 100% dan akurasi sebesar 83,50% (95%CI: 74,89%-90,08%).

Kesimpulan: *CT scan* dapat membedakan temuan GGO akibat pneumonia COVID-19 dan non COVID-19 dengan ditemukannya ketiga fitur temuan GGO sesuai kriteria RSNA yaitu karakteristik bentuk GGO, lokasi GGO dan keterlibatan pulmo dengan akurasi sebesar 83,50% ((95%CI: 74,89%-90,08%).

Kata kunci: Pneumonia, *CT scan* toraks, *ground-glass opacities*, COVID-19

NON-ENHANCED CHEST CT ACCURACY IN COVID-19 PNEUMONIA AND NON- COVID-19 PNEUMONIA DIAGNOSIS BASED ON GROUND-GLASS OPACITIES

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ABSTRACT

Background: Pneumonia is one of the causes of death due to infection with the incidence in developing countries reaching 5 times than in developed countries. Pneumonia can be caused by viruses, bacteria or other causes. Non-enhanced chest CT has a fairly high sensitivity but low specificity in diagnosis of COVID-19, therefore understanding and knowledge in differentiating the cause of pneumonia based on the appearance of GGO is needed.

To determine the diagnostic accuracy of a non-enhanced chest CT scan in differentiating COVID-19 and non-COVID-19 pneumonia based on the finding of ground-glass opacities.

Methods: A cross-sectional study, with retrospective data collection of non-enhanced chest CT images. Samples were taken from patients with a clinical diagnosis of pneumonia who had undergone non-enhanced chest CT scan and laboratory examination (RT-PCR, hematological examination and/or sputum/blood culture) to determine the cause of pneumonia in September 2020 to September 2021. Data were analyzed using IMB SPSS 26 and MedCalc for diagnostic test.

Result: A total of 103 patients, consisting of 64 men and 39 women, with the most age group of 61-75 were included. The sensitivity value was 100% (95%CI: 92.45%-100%), specificity 69.64% (95%CI: 55.90%-81.22%), NPP 73.44% (95%CI: 65.03%-80.43%, NPN 100% and accuracy 83.50% (95%CI: 74.89%-90.08%).

Conclusion: Non-enhanced chest CT scan can distinguish ground-glass opacities of COVID-19 and non-COVID-19 pneumonia by finding three features according to the RSNA criteria, namely the morphological characteristic, location and pulmonary involvement with an accuracy of 83,50% (95%CI: 74,89-90,08%)

Keywords: Pneumonia, CT *scan* toraks, *ground-glass opacities*, COVID-19