

INTISARI

Latar belakang: Penyakit paru obstruktif kronis (PPOK) merupakan penyakit yang ditandai keterbatasan aliran udara yang disebabkan kombinasi kerusakan parenkim (emfisema) dan penyakit saluran napas kecil (bronkiolitis obstruktif). Emfisema masih menyumbang 5% semua kematian di dunia sehingga penting dikembangkan strategi diagnostik dan terapeutik yang efektif. Pencitraan memainkan peran penting untuk evaluasi distribusi emfisema. Peningkatan sudut kostofrenikus dan pelebaran sela iga menjadi bagian dari kriteria penilaian *barrel chest* masih bersifat kualitatif yang dapat menimbulkan variasi interpretasi antar pengamat. Penelitian ini bertujuan untuk mengetahui peningkatan sudut kostofrenikus dan pelebaran sela iga pada pasien emfisema.

Metode: Penelitian ini adalah penelitian *cross sectional*, kuantitatif, serta pengambilan sampel secara retrospektif. Penelitian dilakukan di RSUD Dr. Sardjito Yogyakarta dengan subjek pasien emfisema orang Indonesia yang berobat rawat jalan dari Januari 2016-Desember 2020. Sebanyak 30 sampel kelompok emfisema dan 30 sampel kelompok kontrol diukur sudut kostofrenikus dan jarak sela iga kanan. Sudut kostofrenikus diukur dari sudut yang dibentuk oleh diafragma dan iga kanan. Jarak sela iga diukur pada sela iga kanan antara tepi bawah iga posterior ke-5 hingga tepi atas iga posterior ke-6 (umumnya sejajar arcus aorta) pada mid hemitoraks kanan. Analisis statistik menggunakan uji T tidak berpasangan ($p < 0,05$).

Hasil: Penelitian ini didapat 60 subjek, 66,67% laki-laki dan 33,33% perempuan. Kelompok usia subjek yaitu 20% berusia 18-45 tahun dan 80% berusia 45-65 tahun. Kelompok emfisema yang memiliki data spirometri (20%) memiliki rata-rata FEV1 62,66% nilai prediksi (GOLD 2) dan yang memiliki data AGD (86,67%) rata-rata PaCO₂ 59 mmHg. Rerata sudut kostofrenikus kelompok emfisema 54.47°, sedangkan kelompok kontrol 30.76°. Rerata jarak sela iga kelompok emfisema 1.63 cm, sedangkan kelompok kontrol 1.55 cm. Hasil uji t tidak berpasangan menunjukkan sudut kostofrenikus dan jarak sela iga kanan kelompok emfisema lebih besar secara bermakna dibandingkan kelompok kontrol ($p < 0,000$).

Kesimpulan: Sudut kostofrenikus dan jarak sela iga kanan orang Indonesia berbeda bermakna antara pasien emfisema dengan orang normal, dimana rata-rata sudut kostofrenikus dan jarak sela iga kanan pasien emfisema lebih besar secara kuantitatif dibandingkan orang normal pada foto toraks PA.

Kata kunci: sudut kostofrenikus, jarak sela iga, emfisema pulmonum, foto toraks

ABSTRACT

Background: *Chronic Obstructive Pulmonary Disease (COPD) is a disease characterized by airflow limitation caused by a combination of parenchymal damage (emphysema) and small airways disease (obstructive bronchiolitis). Emphysema gives 5% of all deaths in the world so it's important to develop effective diagnostic and therapeutic strategies. Imaging is important for the evaluation distribution of emphysema. Increased costophrenic angle and intercostal space as part of the barrel chest criteria is still qualitative which can lead to variations in interpretation between observers. This research aims to determine the increase in costophrenic angle and intercostal space in emphysema patients.*

Methods: *This research is a cross-sectional, quantitative, retrospective sampling and was conducted at Dr. Sardjito Hospital Yogyakarta as the subject of Indonesian emphysema outpatient treatment from January 2016-December 2020. A total of 30 samples of the emphysema group and 30 samples control group were measured for their costophrenic angle and intercostal space. The costophrenic angle is measured from the angle formed by the diaphragm and the right rib. The intercostal space was measured on the right intercostal space between the lower edge of the 5th posterior rib to the top edge of the 6th posterior rib (usually parallel to the aortic arch) in the right midhemithorax. Statistical analysis used a non-paired T-test ($p < 0.05$).*

Results: *This study obtained 60 subjects, 66.67% male and 33.33% female. The subjects group were 20% aged 18-45 years and 80% aged 45-65 years. The emphysema group that had spirometry data (20%) had an average FEV1 of 62.66% and BGA data (86.67%) had an average PaCO₂ of 59 mmHg. The mean costophrenic angle in the emphysema group was 54.47°, while the control group was 30.76°. The mean intercostal space in the emphysema group was 1.63 cm, while the control group was 1.55 cm. The results of the non-paired T-test showed that costophrenic angle and intercostal space in the emphysema group were significantly greater than control group ($p < 0.000$).*

Conclusions: *Indonesian people's costophrenic angle and intercostal space are significantly different between emphysema and normal patients, where the average costophrenic angle and intercostal space of emphysema patients are quantitatively higher than normal people on PA chest X-ray.*

Keywords : *costophrenic angle, intercostal space, pulmonary emphysema, chest X-ray*