Analisis faktor-faktor risiko acute respiratory distress syndrome pada pasien COVID-19 (studi kasus pasien rawat inap COVID-19 pada salah satu rumah sakit di Jakarta) = Risk factor analysis of acute respiratory distress syndrome in COVID-19 (case study of COVID-19 inpatients in one of the hospitals in Jakarta)

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Abstrak

Pada tanggal 11 Maret 2020, WHO menetapkan COVID-19 sebagai pandemi di dunia. Dilansir dari situs covid19.who.int, per 19 Juni 2021 Indonesia berada di urutan ke-18 dan memiliki 1,963,266 kasus terkonfirmasi dengan total 54,043 pasien yang meninggal. Salah satu kasus berat atau termasuk dalam kelompok kritis adalah pasien dengan Acute Respiratory Distress Syndrom (ARDS). Melihat banyaknya kasus ARDS yang berakhir dengan kematian dan terbatasnya gambaran klinis terkait ARDS yang disebabkan oleh COVID-19 membuat penelitian ini berfokus untuk mengidentifikasi faktor risiko yang berasosiasi dengan kejadian ARDS pada pasien COVID-19. Faktor-faktor risiko kejadian ARDS pada pasien COVID-19 diidentifikasi dengan menggunakan metode classification tree dimana performa model diukur dari nilai akurasi, sensitivitas, spesifisitas, dan AUC. Cost matrix digunakan sebagai strategi rebalancing data. Besaran risiko relatif faktor-faktor tersebut terhadap ARDS akan dihitung dengan menggunakan metode regresi logistik. Model yang dihasilkan memiliki nilai akurasi, sensitivitas, spesifisitas, dan AUC masing-masing sebesar 0.879, 0.804, 0.900, dan 0.852. Pasien COVID-19 yang mengalami peningkatan kadar hemoglobin, PCO_2 dan CRP, penurunan kadar PCT, saturasi oksigen, dan urea, mengalami gejala sesak napas, dan memiliki komorbid pneumonia secara rata-rata memiliki risiko lebih tinggi untuk mengalami kejadian ARDS.

.....On March 11, 2020, WHO declared COVID-19 as a worldwide pandemic. Reporting from the website covid19.who.int, as of June 19, 2021, Indonesia was in 18th place and had 1,963,266 confirmed cases with a total of 54,043 patients who died. One of the severe cases or included in the critical group was a patient with Acute Respiratory Distress Syndrome (ARDS). Seeing the large number of ARDS cases that ended in death and the limited clinical picture related to ARDS caused by COVID-19 made this research to be focused on identifying risk factors associated with ARDS incidence in COVID-19 patients. Identification of risk factors for the incidence of ARDS in COVID-19 patients using a classification method where the performance of the model is measured of the values of accuracy, sensitivity, specificity, and AUC. Cost matrix is used as a data rebalancing strategy. The relative risk of ARDS was calculated using the logistic regression method. The accuracy, sensitivity, specificity, and AUC obtained in the model are 0.879, 0.804, 0.900, and 0.852, respectively. COVID-19 patients who experienced increased hemoglobin, PCO_2, and CRP levels, decreased PCT levels, oxygen saturation, and urea, experienced symptoms of shortness of breath, and had pneumonia on average had a higher risk of developing ARDS.