

# Predictors to Intensive Care Unit Admission Among Patient With Coronavirus Disease in Sukraraj Tropical and Infectious Disease Hospital, Nepal: A Case-Control Study

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The clinical features of COVID-19 are vary widely, ranging from asymptomatic states or mild upper respiratory tract infections to severe pneumonia. Previous studies have shown that 20.0% of COVID-19 patients are hospitalized, out of which 10.0–20.0% are admitted to the Intensive Care Unit. The present study aims to assess predictors associated with COVID-19 leading to Intensive Care Unit admission among reverse transcriptase-polymerase chain reaction (RT-PCR) positive patients in Sukraraj Tropical and infectious disease hospital, Nepal.

A case-control study was conducted from June 2022 to July 2022 among patients admitted to Sukraraj Tropical and Infectious Disease Hospital. A hospital-based age ( $\pm 2$  years) and sex-matched case-control study design were adopted in which ICU admitted (case group,  $n= 33$ ) and general ward admitted (control group,  $n=66$ ) were included . Data were collected using a structured questionnaire. Data were analyzed using the Statistical Package for Social Science version 11.5. The Chi-square test and conditional logistic regression to determine the predictors associated with ICU admission.

High blood pressure, high C-reactive protein ,and poor application of preventive practices were found to be the predictors of ICU admission. Conditional logistics regression analyses revealed that independent risk factors associated with ICU admission were elevated blood pressure (AOR = 2.22; 95% CI 1.05 –4.71,  $p= 0.015$ ) and abnormal C-Reactive Protein (AOR = 2.92; 95% CI 1.24 –6.84,  $p = 0.012$ ). Likewise, patients with poor preventive practice (AOR = 3.34; 95% CI 1.19 –9.31,  $p=0.02$ ) more likely to get admitted to ICU than patient with good preventive practices.

These research findings hold potential significance for facilitating early triage and risk assessment in COVID-19 patients.

Keywords: Clinical predictors, COVID-19, Intensive Care Unit, Preventive practices, Sukraraj hospital

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