

IDENTIFICATION OF RISK FACTORS ASSOCIATED WITH ICU ADMISSION IN COVID-19 PATIENTS

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Introduction	Method	Results
<ul style="list-style-type: none">COVID-19 was declared as a Pandemic by WHO in the year 2020. COVID-19 overwhelmed healthcare resources including ICU beds across hospitals which are limited in numberAlthough many patients with no or mild symptoms did not require any hospitalization, approx. 20% of patients required hospitalization and some of them need Intensive Care support which overburdened the overall healthcare systemIncreased risk of ICU admission may be associated with the underlying comorbidities and demographic factors in COVID-19 infected patientsReduction in ICU admissions, improvement in patient outcome and optimal resource utilization can be realized by early identification of patients who have higher risks for developing severe illness and being admitted in ICU	<ul style="list-style-type: none">We conducted a cross-over, retrospective analysis from a large deidentified database of US health insurance claims covering lives from commercial and Managed Medicare plansCohort IdentificationPatients diagnosed with COVID-19 infection between 1st April 2020 to 30th September 2020 were includedInternational Classification of Disease, Tenth Revision (ICD-10) diagnosis codes for COVID-19 were used to identify the cohortFrom the period of first diagnosis (Index date) 1 year prior and 90 days follow up eligible patients were consideredComorbid conditions were identified using ICD-10 CM codes during the 1-year baseline periodPrimary outcome variable was the advanced medical care (ICU) admission due to COVID-19 for 3 months follow-up period from the index dateMultivariate regression model was used to evaluate the association between sociodemographic characteristics, baseline comorbid conditions and advanced medical care admission related to COVID-19	<ul style="list-style-type: none">The study included 176,284 patients with diverse race/ethnicity (83,863 [47.6%] White, 18,708 [10.6%] African-American, and 27,211 [15.4%] Hispanic), a mean (SD) age of 55.5 (21.9) years and 44% males.Notable statistically significant clinical predictors (Figure 1) for ICU admission are - Asthma (OR: 1.32 CI: 1.16-1.50), Chronic Kidney Disease (OR: 1.36 CI: 1.23-1.51), Chronic Obstructive Pulmonary Disease (OR: 1.35 CI: 1.20-1.52), Diabetes (OR: 1.55 CI: 1.41-1.72), Heart Failure (OR: 1.15 CI: 1.01-1.31), Hyperlipidemia (OR: 1.18 CI: 1.07-1.31), Hypertension (OR: 1.81 CI: 1.61-2.01), Rheumatoid Arthritis / Osteo Arthritis (OR: 1.14 CI: 1.04-1.25)Statistically significant demographics related risk factors (Figure 1) include Male Sex (OR: 1.52 CI: 1.40-1.66), Older Age->=55 years (OR: 2.11 CI: 1.90-2.36), African-American race (OR: 1.19 CI: 1.05-1.36) and Hispanic race (OR: 1.37 CI: 1.29-1.54)
<h3>Objective</h3> <ul style="list-style-type: none">The current study aims at identifying comorbidities in COVID 19 patients which are associated with higher risk of worse prognosis and required intensive care unit for disease management and saving lives of COVID infected patients		<h3>Discussion & Limitations</h3> <ul style="list-style-type: none">The data suggests that elderly male population having high comorbidity burden required advanced care unitThis study uses data from a single payer so prospective studies with multiplayer data and larger sample size are needed to understand mechanism and causality

Figure 1: Odds Ratio for regression adjusted clinical predictors & demographics related risk factors

