Posted on 30 Jan 2024 — The copyright holder is the author/funder. All rights reserved. No reuse without permission. — https://doi.org/10.22541/au.170664452.23569727/v1 — This is a preprint and has not been peer-reviewed. Data may be preliminary.

Inpatient Utility of Pro-BNP in COVID-19: A Single Center Experience

Saif Ali[1], Shuktika Nandkeolyar[1], Tanya Doctorian[1], Payush Chatta[1], Shaunrick Stoll[1], Eunice Park[1], Reece Stutzman[1], Kristoff Foster[1], Sharon Fabbri[1], Dmitry Abramov[2], Liset Stoletniy[1], and Antoine Sakr[1]

[1]Loma Linda University Medical Center
[2]Affiliation not available

January 30, 2024

Abstract

Abstract: Aims: The purpose of this study was to identify serologic and clinical factors in SARS-Coronavirus 2 (SARS-CoV-2) patients which may correlate and predict need for mechanical ventilation and mortality. Furthermore, we sought to determine if a diagnosis of heart failure and elevations in Pro B-Type Natriuretic Peptide (pro-BNP) predicted clinical endpoints. Methods: 135 patients age 18 or older admitted to Loma Linda University Medical Center with SARS-Co-2 between March 16, 2020 and June 8, 2020 were categorized by demographic data (age, race, and gender), clinical parameters (temperature, heart rate, blood pressure, and peak fraction of inspired oxygen (FiO2)), and serologic markers pro-BNP. A regression analysis was done to correlate need for mechanical ventilation and mortality. Results: In univariate analysis, elevated pro-BNP correlated with need for mechanical ventilation (p=0.006) and mortality (p=0.001). In multivariate analysis, elevated pro-BNP was significantly associated with requiring intubation (OR 4.5, p=0.03). Each year of age (OR 1.08, p=0.006) and unit of BMI (OR= 1.05, p=0.03) were significantly associated with increased mortality. In patients without a diagnosis of heart failure, average pro-BNP was elevated (1141.66 ng/dL) however it did not correlate with need for intubation or mortality. Conclusions and clinical implications: Coronavirus disease-19 (COVID-19) is associated with increased mortality and worse clinical outcomes in patients with heart failure. Despite a lack of heart failure diagnosis, elevated markers such as NT-Pro-BNP have been associated with increased mortality in COVID-19 hospitalized patients. Although no clear 'cut-off' has been described, our study findings suggest elevated pro-BNP may be a useful marker for disease severity and respiratory complications of COVID-19 patients with possible cardiac involvement. Similar to other single center findings, our study demonstrates worsened clinical outcomes for patients with advanced age and elevated body-mass index.

Title : Inpatient Utility of Pro-BNP in COVID-19: A Single Center Experience

Short Title: Pro-BNP and COVID-19

Authors : Saif Ali MD [1], Shuktika Nandkeolyar MD[1], Tanya Doctorian MD,[1] Payush Chatta DO[2], Eunwoo Park MD[2], Sharon Fabbri NP[1], Shaunrick Stoll[3], Kristoff Foster[3], Reece Stutzman[3], Dmitry Abramov MD[1], Liset Stoletniy MD[1], Antoine Sakr MD[1]

Affiliations: [1]Division of Cardiology, Loma Linda University, CA

[2]Department of Internal Medicine, Loma Linda University, CA[3]Loma Linda University School of Medicine, Loma Linda, CA

All authors take responsibility for all aspects of the reliability and freedom from bias of the data presented and their discussed interpretation. All authors have no funding or grants to disclose. All authors declare that they have no potential conflicts of interest that might be relevant to the contents of this manuscript.

Posted on 30 Jan 2024 — The copyright holder is the author/funder. All rights reserved. No reuse without permission. — https://doi.org/10.22541/au.170661452.23569727/v1 — This is a preprint and has not been peer-reviewed. Data may be preliminary.

Corresponding Author:

Saif Ali

11234 Anderson Street, Room 4420

Loma Linda, CA 92354

E-mail: saifbinali123@gmail.com

Acknowledgement: Saif Ali MD[1], Shuktika Nandkeolyar MD[1], and Tanya Doctorian MD[1] were critical to the conception, data analysis, and editing of the manuscript. Payush Chatta DO[2], Eunwoo Park MD[2], Sharon Fabbri NP[1], Shaunrick Stoll[3], Kristoff Foster[3]and Reece Stutzman[3] assisted in data collection. Dmitry Abramov MD[1], Liset Stoletniy MD[1], and Antoine Sakr MD[1] provided intellectual concepts and were critical to the process of editing this manuscript. The authors have no financial or material support to disclose.

Hosted file

`COVID-19 IJCP Manuscript 2-7-21.docx` available at https://authorea.com/users/725629/articles/708695-inpatient-utility-of-pro-bnp-in-covid-19-a-single-center-experience