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Abstract 13840: Impact of Age and Variant on Cardiovascular Events Among Patients Hospitalized With COVID-19: An Analysis From the AHA COVID-19 CVD Registry

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Abstract

Introduction: The COVID-19 pandemic has caused significant cardiovascular (CV) morbidity and mortality. Using a national registry, we evaluate the impact of age and variant on CV outcomes across the three main coronavirus waves.

Methods: Using the AHA's COVID-19 CV Disease Registry, we divided patients hospitalized with COVID-19 into three groups based on dominant variant at the time of admission (Alpha, Delta, Omicron). We further stratified patients based on age (young: 18-40, older: >40 years). Using adjusted logistic regression, we compared rates of major adverse cardiovascular events (MACE: new onset heart failure, myocardial infarction, stroke, or death) and in-patient mortality between the groups.

Results: There were 41,426 patients in the alpha wave (young: 5,585, older: 35,841), 3,349 patients in the delta wave (young: 690, older: 2,659), and 646 patients in the omicron wave (young: 213, older: 433). The cohort's median (25th-75th %ile) age was 63 (50-75) years. 46.8% of the patients were female. Rates of MACE in the Alpha, Delta, and Omicron waves were 20.8%, 23.6%, and 15.5%. Rates of death were 14.0%, 14.8% and 6.0%, respectively. Compared to alpha, patients presenting during delta had increased odds of MACE and death (OR: 1.57 [1.42-1.73] and OR: 1.49 [1.34-1.66]). Patients presenting during omicron had decreased odds of death (OR: 0.6 [0.43-0.84]) and similar odds of MACE compared to alpha. When stratifying by age, both young and older patients presenting during delta had increased odds of MACE and

death when compared to alpha (Fig 1A). When compared to young patients, older patients had increased odds of MACE in all three waves (Fig 1B).

Conclusions: Patients had increased odds of MACE and death during delta compared to alpha. Compared to young patients, older patients had increased odds of MACE across all three waves. These findings help elucidate the differential impact of age and variant on cardiovascular outcomes among those hospitalized with COVID-19.

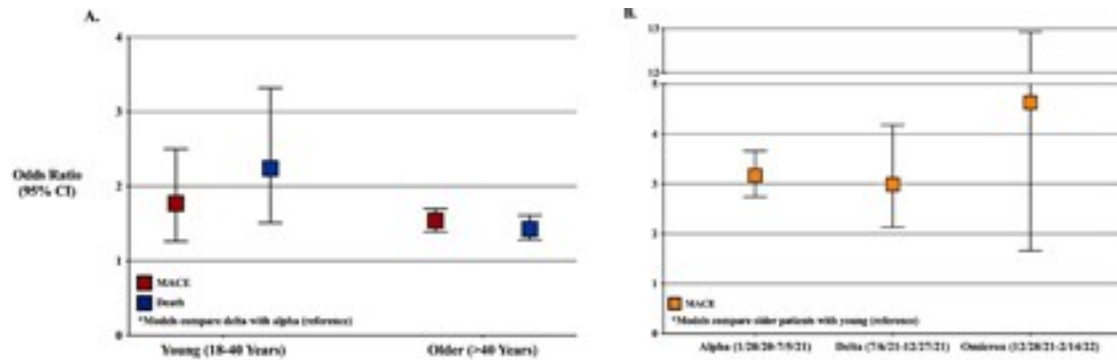


Figure 1. A) Association of COVID-19 variant (Delta vs Alpha [reference]) with outcomes stratified by age. B) Association of age (Older vs Young [reference]) with major adverse cardiovascular events stratified by variant.