Incidence of a cardiovascular disease in patients presenting to the hospital with COVID-19

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Background

- The clinical manifestations of COVID-19 infection ranges from mild respiratory infection to severe acute respiratory Distress Syndrome (ARDS).
- Like influenza, COVID-19 causes hypercoagulability, increased inflammatory response, increased viscosity and endothelial cell dysfunction which is a possible explanation to the cardiovascular manifestations and cardiac failure.
- Cardiovascular disease is the leading cause of death in the united states.
- There are no published studies so far looking into how many people develop a cardiovascular disease after a confirmed infection.

Objective

This study set out to investigate the incidence of developing a cardiovascular disease in symptomatic COVID-19 infected patients that presented to the hospital.

Methods

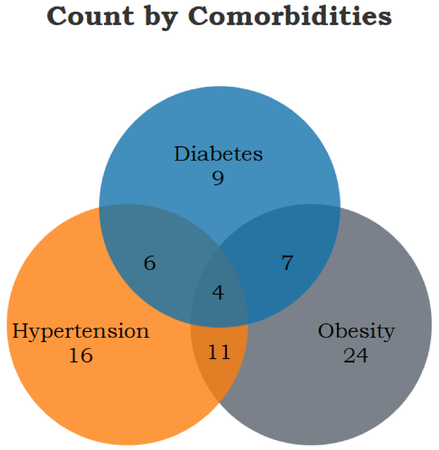
Study design
- IRB approved retrospective chart review

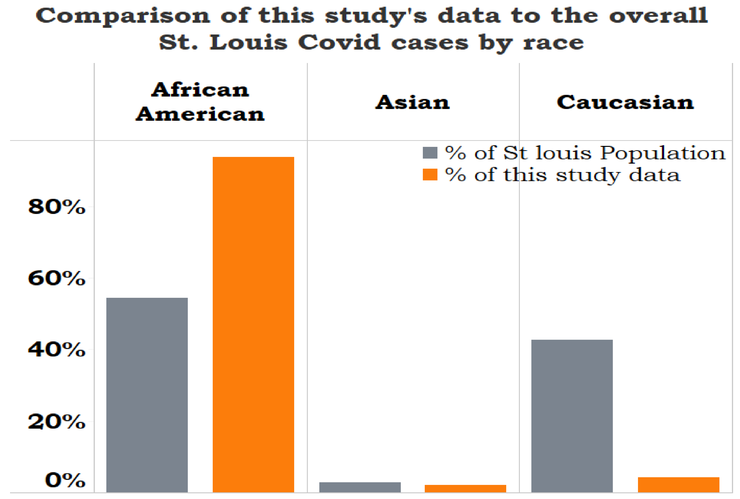
Inclusion criteria
- Patients aged 18-89 years old
- PCR confirmed COVID-19 infection presenting to the hospital between mid-October and mid-December 2021; a span of 60 days.

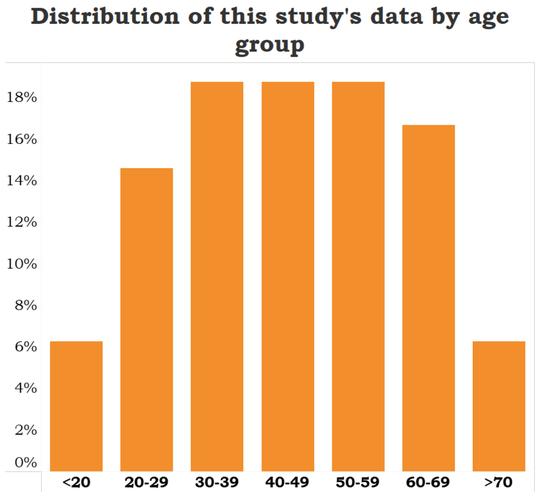
Study Variables
- Independent variable: cardiovascular disease defined as MI, stroke, DVT, PE, arrhythmia, myocarditis and heart failure.
- Dependent variables: age, sex, race, vaccination status co-morbidities (HTN, DM), BMI for assessment of obesity, smoking status and illegal drug use.

Data analysis
- Stratification according to age, race, sex and comorbidities
- No prior cardiovascular disease screening applied
- Descriptive statistics used to assess endpoints. Results expressed as mean and median.

Results







- About 4% (2/48) patients developed a cardiovascular disease.
- The only observed condition was new onset arrhythmia
- Mortality rate was 2%
- Vaccination rate was 12.5% vs 87.5% unvaccinated

Discussion/Conclusion

- This study shows that cardiovascular disease might be a long-term effect of COVID-19
- Other cardiovascular manifestations might have been less likely due to the advancement in COVID-19 treatment
- Effects could be delayed in some patients therefore, there is a need to follow-up with recovered patients over time.
- There are also disproportionate effects on minoritized communities
- Majority of the patients were unvaccinated
- Further investigation is warranted to reduce disease burden