

Low risk of COVID-19 infection found among people with congenital heart disease

14 October 2020



Credit: American Heart Association

Results of a retrospective analysis suggest that people born with a heart defect who developed COVID-19 symptoms had a low risk of moderate or severe COVID-19 infection, according to a new article published today in the *Journal of the American Heart Association*, an open access journal of the American Heart Association.

In what may be the largest study of its kind to date, researchers at Columbia University Vagelos College of Physicians and Surgeons in New York City explored the impact of COVID-19 infection on patients with [congenital heart disease](#) (CHD). The specialty center follows more than 7,000 adult and [pediatric patients](#) born with a [heart](#) defect. Fifty-three CHD patients (median age 34) with COVID-19 infection were reported at their center between March and July 2020.

"At the beginning of the pandemic, many feared that congenital heart disease would be as big a risk factor for COVID-19 as adult-onset cardiovascular disease" the researchers wrote. However, they are "reassured by the low number of patients treated at their center and the patients'

outcomes."

Among the 43 adults and 10 children with a congenital heart defect infected with COVID-19, additional characteristics included: 58% had complex congenital anatomy; 15% had a [genetic syndrome](#); 11% had pulmonary hypertension; and 17% had obesity. Additional analysis found:

- The presence of a concurrent genetic syndrome in all patients and advanced physiologic stage in [adult patients](#) were each associated with an increased risk of symptom severity.
- Five patients had trisomy 21 (an extra chromosome at position 21); four patients had Eisenmenger's syndrome (abnormal blood circulation caused by structural defects in the heart); and two patients had DiGeorge syndrome (a condition caused by the deletion of a segment of chromosome 22). Nearly all patients with trisomy 21 and DiGeorge syndrome had moderate/severe COVID-19 symptoms.
- As for outcomes among all 53 patients with CHD: nine patients (17%) had a moderate/severe infection, and three patients (6%) died.

In addition, the researchers note several limitations to their analysis:

- "While our sample size is small, these results imply that specific congenital heart lesions may not be sufficient cause alone for severe COVID-19 infection."
- "While it is possible that our patient population exercised stricter adherence to social distancing given early publicized concerns about cardiac risk, these early results appear reassuring."
- "...the median age and the frequency of acquired cardiac risk factors were lower in hospitalized patients in our cohort

compared to published reports of hospitalized patients from COVID-19 in NYC at large. This may be because the CHD community, at large, is younger than the general population or because individuals with CHD may have distinct [risk factors](#) for severe COVID-19 infection when compared to the general population. It is possible that a cohort of elderly CHD patients might have a different risk profile than the general population."

The researchers concluded, "Despite evidence that adult-onset cardiovascular disease is a risk factor for worse outcomes among patients with COVID-19, [patients](#) with CHD without concomitant genetic [syndrome](#), and adults who are not at advanced physiological stage, do not appear to be disproportionately impacted."

More information: Matthew J Lewis et al. The Impact of Coronavirus disease 2019 (COVID-19) on Patients with Congenital Heart Disease across the Lifespan: The Experience of an Academic Congenital Heart Disease Center in New York City, *Journal of the American Heart Association* (2020). [DOI: 10.1161/JAHA.120.017580](https://doi.org/10.1161/JAHA.120.017580)

Provided by American Heart Association

APA citation: Low risk of COVID-19 infection found among people with congenital heart disease (2020, October 14) retrieved 29 April 2021 from <https://medicalxpress.com/news/2020-10-covid-infection-people-congenital-heart.html>

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