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BACKGROUND The COVID-19 pandemic had a considerable impact on the provision of structural heart intervention worldwide. Our objectives were: 1) to assess the impact of the COVID-19 pandemic on transcatheter aortic valve replacement (TAVR) activity globally; and 2) to determine the differences in the impact according to geographic region and the demographic, development, and economic status of diverse international health care systems.

METHODS We developed a multinational registry of global TAVR activity and invited individual TAVR sites to submit TAVR implant data by each site were recorded, as was a variety of indices relating to type of health care system and national economic indices. The primary subject of interest was the impact on TAVR activity during each of the pandemic waves (2020 and 2021) compared with the same period pre-COVID-19 (2019).

RESULTS Data were received from 130 centers from 61 countries, with 14 subcontinents and 5 continents participating in the study. Overall, TAVR activity increased by 16.7% (2,337 procedures) between 2018 and 2019 (ie, before the pandemic), but between 2019 and 2020 (ie, first year of the pandemic), there was no significant growth (-0.1% -10 procedures). In contrast, activity again increased by 18.9% (3,085 procedures) between 2020 and 2021 (ie, second year of the pandemic). During the first pandemic wave, there was a reduction of 18.9% (945 procedures) in TAVR activity among participating sites, while during the second and third waves, there was an increase of 6.7% (489 procedures) and 15.9% (1,042 procedures), respectively. Further analysis and results of this study are ongoing and will be available at the time of the congress.

CONCLUSION The COVID-19 pandemic initially led to a reduction in the number of patients undergoing TAVR worldwide, although health care systems subsequently adapted, and the number of TAVR recipients continued to grow in subsequent COVID-19 pandemic waves.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-550 In-Hospital vs Out-of-Hospital STEMI Mortality in COVID-19–Negative vs COVID-19–Positive Patients in a Large Hospital System in South Florida

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BACKGROUND It is known that patients experiencing in-hospital STEMI have a higher mortality compared with out-of-hospital STEMI. However, this has not been studied extensively in COVID-19–positive patients with STEMI. The purpose of this study was to compare the mortality of in-hospital vs out-of-hospital STEMI in patients with and without COVID-19 infection.

METHODS We conducted a single-center, retrospective observational study of all patients admitted to Memorial Healthcare System facility hospitals from April 1, 2020, to August 31, 2021, who had a STEMI. The primary outcome was in-hospital mortality. Subgroup analyses of in-hospital and out-of-hospital STEMI patients were made.

RESULTS A total of 302 patients were included, with 20 being COVID-19 positive. The mortality of in-hospital STEMI was significantly higher than out-of-hospital STEMI, regardless of COVID-19 status. In-hospital COVID-19–negative STEMI patients had a mortality of 33.3% vs in-hospital COVID-19–positive patients with a mortality of 84.6% (P = 0.015) (Figure 1). Out-of-hospital COVID-19–negative STEMI patients had a mortality of 8.5% vs out-of-hospital COVID-19–patients with a mortality of 14.3% (P = 0.474, likely secondary to n = 1 for out-of-hospital COVID-19–positive patient mortality).
CONCLUSION Our study confirmed significantly higher mortality in all patients with in-hospital STEMI compared with out-of-hospital STEMI. COVID-19-positive patients with an in-hospital STEMI had a striking mortality of 84.6%.

CATEGORIES CORONARY: Acute Myocardial Infarction

TCT-551
The Effect of the COVID-19 Vaccines on Individuals Who Develop Incidences of Nontraumatic Intracranial Hemorrhages

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BACKGROUND The effect of messenger RNA COVID-19 vaccines on individuals who develop incidences of nontraumatic intracranial hemorrhages is still poorly misunderstood. Previous research from varying sources has indicated the presence of a nontraumatic intracranial hemorrhage in conjunction with exposure to COVID-19. This research aims to understand if a difference exists between nontraumatic hemorrhagic events with those who received the Pfizer, Moderna, and Johnson & Johnson vaccine compared with those who contracted COVID-19 with no previous vaccination.

METHODS The researchers queried TriNetX (Covid-19 Research Network) of 67 health care organizations. They analyzed data from January 1, 2020, to February 14, 2022, and identified 1,467,016 laboratory-confirmed COVID-19 cases that did not receive a COVID-19 vaccine (Pfizer, Moderna, and Johnson & Johnson or any other at the time of their diagnosis). The researchers identified 1,008,708 Pfizer cases with second doses completed, 784,622 Moderna cases with a completed second dose, and 32,094 Johnson & Johnson cases with completed doses. The researchers created 3 different cohorts to assess the endpoints of nontraumatic hemorrhagic events using COVID-19 as a control against the selected vaccine cohorts. A propensity score matching of a 1:1 was performed to match on the covariates (age, female, male, hypertension, diabetes, coronary artery disease, and chronic obstructive pulmonary disease). The researchers compared the endpoint of nontraumatic hemorrhagic events within 30 days.

RESULTS A total of 3,292,540 patients were included. Of those 1,467,116 (44.5%) labs confirmed COVID-19 that did not have a record of a COVID-19 vaccine (30.6%), 1,008,708 completed Pfizer case, and 784,622 (23.8%) were given Moderna vaccine, and finally (1.1%) 32,094 were given Johnson & Johnson vaccine. Nontraumatic hemorrhagic events were reduced in Pfizer cases (0.014% vs 0.144%; P < 0.001) (100% risk reduction) compared with lab-confirmed COVID-19 that did not receive a COVID-19 vaccine at 30 days. Moderna cases reduced hemorrhagic events (0.008% vs 0.154%; P < 0.001) (94.6% risk reduction), as did Johnson & Johnson (0.069% vs 0.174%; P < 0.001) (59.7% risk reduction).

CONCLUSION Our study confirms prior studies showing significantly worse outcomes in COVID-19-positive STEMI patients with respect to in-patient mortality, ICU admission, and cardiogenic shock. Most striking was an in-hospital mortality of 60% for COVID-19 STEMI patients.

CATEGORIES CORONARY: Acute Myocardial Infarction

| Table 1. Clinical Outcomes of STEMI Patients |
|---------------------------------------------|
|                                      | COVID Negative | COVID Positive | p  |
|---------------------------------------------|
| Primary outcome, n (%)                     | 162            | 50             |    |
| In-hospital death                          | 27/282 (9.6%)  | 12/20 (60)     | <0.001 |
| Went to Cath Lab                           | 24/276 (8.7%)  | 6/14 (42.8%)   | <0.001 |
| Did Not Go to Cath Lab                     | 3/30 (10)      | 6/6 (100)      | 0.182 |
| Secondary outcomes                         |                |                |    |
| Cardiogenic shock, n (%)                   | 45/282 (15.9)  | 7/20 (35)      | 0.029 |
| ICU admission, n (%)                       | 73/282 (25.9)  | 13/20 (65)     | <0.001 |
| Hospital length of stay, days              | 2.3 (1.6-4.3)  | 19.3 (20-21.7)| <0.001 |

CONCLUSION Our study confirms prior studies showing significantly worse outcomes in COVID-19-positive STEMI patients with respect to in-patient mortality, ICU admission, and cardiogenic shock. Most striking was an in-hospital mortality of 60% for COVID-19 STEMI patients.

CATEGORIES CORONARY: Acute Myocardial Infarction

pharmacology/Pharmacotherapy