Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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BACKGROUND Venous thromboembolism (VTE) in coronavirus disease 2019 COVID-19 has been established. We sought to evaluate the clinical impact of thrombosis in COVID-19-positive patients over the span of the pandemic to date.

METHODS We analyzed COVID-19-positive patients with the diagnosis of thrombosis who presented to the MedStar Health system (11 hospitals in Washington, DC and Maryland) during the pandemic (March 1, 2020 to March 31, 2021). We compared clinical course and outcomes based on the presence or absence of thrombosis and then cardiac thrombosis specifically.

RESULTS The cohort included 11,537 COVID-19-positive admitted patients. Of these patients, 1,248 had noncardiac thrombotic events (VTE or stroke), and 1,009 patients had cardiac thrombosis (myocardial infarction) during their hospital admission. In the thrombosis arm, the cohort’s mean age was 64.5 ± 15.3 years, 53.3% were men and the majority African American (64.9%). Patients with thrombosis tended to be older, with more comorbidities. White blood cell count, creatinine, C-reactive protein, lactate dehydrogenase, and ferritin were all significantly higher in the thrombosis cohort compared with those patients without thrombosis. In-hospital mortality was significantly higher (16.0%) in COVID-19-positive patients with concomitant thrombosis than those without thrombosis (7.9%; P < 0.001) but less compared with COVID-19-positive patients with cardiac thrombosis (24.7%; P < 0.001; Figure 1).

CONCLUSION Patients with COVID-19 and thrombosis are at higher risk for in-hospital mortality. However, this prognosis is not as grim as cardiac thrombosis. Efforts should focus on early recognition, evaluation, and intensifying care of these patients.

CATEGORIES ENDOVASCULAR: Pulmonary Embolism and Pulmonary Hypertension

TCT-66 Choice and Outcomes of Left Main Coronary DiseaseRevascularization Strategies in England Before and After the COVID-19 Era

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BACKGROUND There are limited data on the impact of the COVID-19 pandemic on left main (LM) coronary revascularization activity, choice of strategy, and post-procedural outcomes.

METHODS All patients with LM disease (> 50% stenosis) undergoing coronary revascularization in England between January 1, 2017 and August 19, 2020 were included (n = 22,235), stratified by time period (pre-COVID: January 1, 2017 to February 29, 2020; COVID: March 1, 2020 to August 19, 2020) and revascularization strategy (percutaneous coronary intervention (PCI) versus coronary artery bypass grafting (CABG)). Logistic regression models were performed to examine odds ratio (OR) of receipt of CABG (vs percutaneous coronary intervention (PCI)) and in-hospital and 30-day postprocedural mortality in the COVID-19 period (vs pre-COVID).

RESULTS There was a decline of 1,354 LM revascularization procedures between March 1 and July 31, 2020 compared with previous years’ (2017 to 2019) averages (-48.8%). Increased use of PCI over CABG was observed in the COVID period (receipt of CABG vs PCI OR 0.46 [0.39, 0.53] compared with 2017), consistent across all age groups. No difference in adjusted in-hospital or 30-day mortality was observed between pre-COVID and COVID periods for both PCI (OR: 0.72 [0.51, 1.02]) and CABG (OR: 0.98 [0.45, 2.14] and 1.51 [0.77, 2.98], respectively) groups.

CONCLUSION LM revascularization activity has significantly declined during the COVID period, with a shift toward PCI as the preferred strategy. Post-procedural mortality within each revascularization group was similar in the pre-COVID and COVID periods, reflecting maintenance in quality of outcomes during the pandemic. Future measures are required to safely restore LM revascularization activity to pre-COVID levels.

CATEGORIES OTHER: Quality, Guidelines, Appropriateness Criteria, Cost-Effectiveness, and Public Health Issues

TCT-67 Mechanical Circulatory Support in Patients With COVID-19 Presenting With Myocardial Infarction: Analysis From the North American COVID-19 Myocardial Infarction Registry

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BACKGROUND ST-segment elevation myocardial infarction (STEMI) complicating COVID-19 infection is associated with increased risk of mortality and stroke. However, little is known about the use of mechanical circulatory support (MCS) among these patients.

OBJECTIVES This article aims to define the patient characteristics and outcomes among COVID-19 patients with STEMI requiring MCS and compare them with historical controls.

METHODS In this prospective, ongoing observational registry, patients with STEMI requiring MCS were compared with those who did not receive MCS. Baseline patient characteristics and in-hospital outcomes were compared between the 2 groups. Primary outcome of interest was a composite of in-hospital mortality, stroke, recurrent MI, and repeat unplanned revascularization.

RESULTS A total of 377 patients from the North American Covid-19 Myocardial Infarction (NACMI) registry were included in this analysis; MCS devices were used in 13.5% of these patients (51 COVID+/MCS− vs 326 COVID+/MCS−). Men constituted 70.3% of all patients (75% in COVID+/MCS− vs 70% in COVID+/MCS−); COVID−/MCS− patients were more likely to be Caucasians compared with COVID+/MCS− patients (63% vs 46%; P = 0.027). Forty-four percent of patients in the COVID+/MCS− group presented with shock versus 10% in the COVID−/MCS− group (P < 0.001). Mean ejection fraction was significantly lower in the COVID+/MCS− group (29% vs 61%; P < 0.001). Patients in the COVID+/MCS− group were older (70.3 ± 12.8 vs 74.3 ± 13.2 years) and had higher rates of diabetes (42.8% vs 26.0%) and heart failure (19.4% vs 11.2%). There were no differences between groups in demographics, comorbidities, or hospitalization characteristics.}
lower in the COVID+/MCS+ group (29.7% ± 13.0% vs 46.6 ± 13.4%, P < 0.001). Among patients who received angiography, COVID+/MCS+ patients were more likely to receive primary percutaneous coronary intervention compared with COVID+/MCS- patients (82% vs 67%; P = 0.09) and less likely to have no culprit vessel (5% vs 19%, P = 0.03). The composite endpoint of in-hospital mortality, stroke, recurrent MI, and repeat unplanned revascularization was significantly higher in COVID+/MCS+ patients (60% vs 28%; P < 0.001) with in-hospital mortality primarily driving the outcome (59% vs 26%; P < 0.001).

CONCLUSION COVID+ patients with STEMI requiring MCS have significantly high in-hospital mortality despite high rates of revascularization.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

TCT-68

Chronic Total Occlusion Percutaneous Coronary Intervention for Patients With Previous CABG: Insights From a Pooled Analysis of 4 Multicenter Registries

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BACKGROUND The outcomes of percutaneous coronary intervention (PCI) for chronic total occlusions (CTOs) in patients with previous coronary artery bypass graft surgery (CABG) have received limited study.

METHODS We examined the clinical angiographic characteristics and procedural outcomes of 11,503 CTO-PCIs performed on 11,397 patients at 108 US and international centers between 2012 and 2020, pooling patient-level data from 4 multicenter registries. In-hospital major adverse cardiovascular events included death, myocardial infarction, stroke, and tamponade.

RESULTS There were 2,776 patients with previous CABG (24.4% of the total cohort). Patients with previous CABG were older (68 vs 64 years old, P < 0.01) and more likely to have diabetes (48% vs 36%, P < 0.001). Patients with previous CABGs had higher J-CTO scores (2.7 ± 1.2 vs 2.1 ± 1.3, P < 0.001) and more proximal-cap ambiguity (43% vs 32%, P < 0.001) compared with patients who did not have previous CABGs. Antegrade wiring was the most used strategy in the previous CABG group (46% vs 66%), followed by retrograde crossing (35% vs 18%) and antegrade dissection and re-entry (19% vs 15%, P < 0.001).

Patients with previous CABG required more contrast material (250 [175,350] vs 240 [170,331] mL, P < 0.001), and intravascular imaging was used more often (36% vs 33%, P = 0.02). Technical (80% vs 87%, P < 0.001) and procedural (79% vs 86%, P < 0.001) success rates were lower in patients who had previous CABGs but had similar incidence of in-hospital major adverse cardiovascular events (MACE) (2.5% vs 2.4%, P = 0.77).

CONCLUSION CTO-PCI in patients with previous CABG is associated with lower technical and procedural success but similar in-hospital rates of major adverse cardiovascular events.

CATEGORIES CORONARY: Complex and Higher-Risk Procedures for Indicated Patients (CHIP)