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IPC: INTERNATIONAL POSTER COMPETITION

IPC35.



Withdrawn

SPECIAL SESSION: COVID-19

SS08.



Increased Stroke Severity, ST-elevation Myocardial Infarction, Type A Aortic Dissection, and Deaths at Home in an Early Epicenter of the Coronavirus Disease 2019 Pandemic

Clayton J. Brinster, Gabriel Vidal, James Jenkins, Aditya Bansal, Ross Parkinson, Charles Leithead, Hernan Bazan, Samuel R. Money, Chip Sternbergh, Ochsner Medical Center, New Orleans, La

Objective: The effect of the coronavirus disease 2019 (COVID-19) pandemic on conditions other than COVID-19 has been difficult to quantify. Early reports suggested widespread delays in acute care; however, the extended effects of the pandemic on life-threatening conditions has not been reported. We evaluated the ongoing effects of the COVID-19 pandemic on cardiovascular pathology at a tertiary care hospital.

Methods: Cases of type A aortic dissection (TAAD), ST-segment elevation myocardial infarction (STEMI), and non-STEMI were identified at a tertiary care center. National Institutes of Health Stroke Scale (NIHSS) data for consultations from a >50-hospital telestroke network and direct stroke admissions to a central hospital were identified. Two cohorts were established: January through December 2019 (12 months; before COVID-19) and March 2020 through December 2020 (10 months; COVID-19). New Orleans emergency medical services (EMS) data from 2019 and 2020 was formally requested.

Results: Cases of TAAD increased from 0.67/month in the pre-COVID-19 period to 1.42/month during the COVID-19 era (+112%; $P = .012$; Table). The STEMI cases increased from 1.0/month before COVID-19 to 2.2/month (+120%; $P = .013$) during COVID-19 in the setting of a decrease in non-STEMI cases from 26.6/month before COVID-19 to 18.2/month in the COVID-19 era (-32%; $P = .001$). The pre-COVID-19 NIHSS score per admission ($n = 1203$) was 7.8 compared with 8.6 in the COVID-19 period ($n = 863$), or +10.3% ($P = .04$). When ischemic stroke was isolated, the average NIHSS score per patient increased from 8.0 before COVID-19 ($n = 861$) to 8.9 during the COVID-19 period ($n = 563$), or +11.3% ($P = .02$). The pre-COVID-19 telestroke consultation average NIHSS score for all strokes ($n = 4087$) was 4.6/patient vs 5.3 in the COVID-19 era ($n = 1690$), or +15.2% ($P = .002$). When telestroke ischemic strokes were analyzed, the average NIHSS score increased from 6.1/patient before COVID-19 ($n = 2868$) to 7.8 in the COVID-19 era ($n = 1182$), or +28% ($P < .0001$). New Orleans EMS data revealed a stark increase in the number of patients found dead at home on arrival for urgent medical transport in the COVID-19 era (from 59/month to 94/month, or +58%; $P = .003$).

Conclusions: To the best of our knowledge, ours is the first analysis of ongoing stroke severity during the pandemic, revealing significantly worse NIHSS scores throughout a >50 hospital stroke network. In contradistinction to the widespread data from the early pandemic, we have reported major increases in TAAD and STEMI at a tertiary care center. In addition, citywide EMS data demonstrated that 58% more patients per month were reported dead on arrival by the EMS during the pandemic. This constellation of findings substantiates national concern that patients have continued to delay care in the COVID-19 era, leading to increasingly severe, acutely symptomatic presentations and potentially preventable morbidity and mortality.

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RS08.



Outpatient Chronic Anticoagulation Improves Outcomes in Patients With Coronavirus Disease 2019 and Cardiovascular Risk Factors

Andrew K. Gibson,¹ Yan Yan,² Kelley Chadwick-Mansker,² Mohamed A. Zayed,² ¹VA St. Louis Healthcare System, St. Louis, Mo; ²Washington University School of Medicine, St. Louis, Mo

Objectives: In 2020, coronavirus disease 2019 (COVID-19) was the leading cause of death for patients with cardiovascular risk factors. Recent studies have suggested that inpatient anticoagulation can reduce the relative risk of mortality for patients already hospitalized due to COVID-19. It remains unknown whether outpatient therapeutic anticoagulation can reduce the risk of hospitalization/intensive care unit (ICU) admission, multisystem organ failure (MSOF), and death for patients with cardiovascular disease after COVID-19 infection. We, therefore, hypothesized that patients who had contracted COVID-19 and were already receiving outpatient chronic therapeutic anticoagulation would have reduced complications.

Methods: From March to October 2020, we retrospectively evaluated all individuals who were COVID-19-positive at the Department of Veterans Affairs (VA) Healthcare System. Using the VA beneficiary identification records locator, we evaluated patient comorbidities and demographics. By reviewing the medication records, we identified a subpopulation of patients who had received outpatient therapeutic anticoagulation for ≥ 90 days before contracting COVID-19. The Common Procedural Terminology/International Classification of Diseases, 10 revisions, codes were used to evaluate the composite of MSOF, 30-day hospitalization/ICU admission, and 30-day in-hospital mortality. Two-sample t tests and χ^2 tests were used to compare the differences in continuous and

Table. Trends in type A aortic dissection, STEMI, NSTEMI, and stroke severity classified by the NIHSS during the pandemic in a major metropolitan area

Category	Before COVID-19	COVID-19	Change (%)	P value
TAAD/month	0.67	1.42	+112%	.012
STEMI/month	1.0	2.2	+120%	.013
NSTEMI/month	26.6	18.2	-32%	.001
NIHSS score				
All stroke admissions ($n = 2066$)	7.8	8.6	+10.3%	.04
Ischemic stroke admissions ($n = 1424$)	8.0	8.9	+11.3%	.02
All telestroke consultations ($n = 5077$)	4.6	5.3	+15.2%	.002
Ischemic telestroke consultations ($n = 4050$)	6.1	7.8	+28.0%	<.0001
Patients found DOA by EMS/month	59	94	+59.3%	.003

COVID-19, Coronavirus disease 2019; DOA, dead on arrival; EMS, emergency medical services; NIHSS, National Institutes of Health Stroke Scale; NSTEMI, non-ST-segment elevation myocardial infarction; STEMI, ST-segment elevation myocardial infarction; TAAD, type A aortic dissection.

categorical variables, and adjusted logistic regression was used to compare MSOF rates.

Results: We identified a total of 48,066 patients treated at the VA who had contracted COVID-19 during the study period. Of these patients, 879 (1.8%) were receiving chronic therapeutic anticoagulation before contracting COVID-19. The anticoagulation regimens included apixaban (55.6%), rivaroxaban (19.1%), and warfarin (15.5%). Patients receiving anticoagulation were more likely to be older (72 vs 59; $P < .01$) and to have cardiovascular risk factors such as diabetes (56.8% vs 31.4%; $P < .01$), hypertension (91.8% vs 54.5%; $P < .01$), hyperlipidemia (84.6% vs 53.6%; $P < .01$), and coronary disease (46.9% vs 15.3%; $P < .01$). They were also more likely to have a history of venous thromboembolism (25.3% vs 3.3%; $P < .01$). Despite the greater comorbidity rates for patients receiving anticoagulation, no differences were observed in ICU admission (24.9% vs 23.6%; $P = .7$) and hospital/ICU mortality rates (11.2% vs 10.2%; $P = .5$). Logistic regression analysis adjusted for cardiovascular morbidity indicated that among patients with prior venous thromboembolism, those who had received outpatient anticoagulation had a 55% decreased odds of composite MSOF (odds ratio, 0.45; $P = .002$).

Conclusions: Our large retrospective database analysis is the first to suggest that outpatient therapeutic anticoagulation might have a beneficial effect on patients with cardiovascular risk factors after COVID-19 infection. Unlike previous studies, which demonstrated that patients with advanced age, diabetes, and cardiovascular disease have increased in-hospital mortality, our study observed that these higher risk individuals had notably lower rates of hospital/ICU admission, MSOF, and ICU mortality.

Cohort	Outpatient anticoagulation					
	All			Hospitalized		
	No	Yes	P value	No	Yes	P value
Patients, No.	47,187	879		9352	29	
Demographics						
Age, years	59	72	<.05	69	73	<.05
Diabetes, %	31.4	56.8	<.05	77.0	94.2	<.05
Hypertension, %	54.5	91.8	<.05	94.2	77.0	<.05
Hyperlipidemia, %	53.6	84.6	<.05	69.6	83.0	<.05
Coronary artery disease, %	15.3	46.9	<.05	27.7	51.7	<.05
Venous thromboembolism, %	3.3	25.3	<.05	7.2	28.9	<.05
Outcomes, %						
Intensive care unit admission	4.7	9.3	<.05	23.6	24.9	.74
Intensive care unit death	2.0	4.2	<.05	10.2	11.2	.54
Hospital death	1.7	4.0	<.05	8.8	10.6	.24

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RS09.



Clinical Outcomes in Peripheral Artery Disease With Coronavirus Disease 2019: A Multicenter Research Network Study

Danielle Kim,¹ Ahsan Zil E. Ali,² Faisal Aziz,² Lawrence Sinoway.²
¹Penn State Hershey College of Medicine, Hershey, Pa; ²Penn State Hershey Medical Center, Hershey, Pa

Objective: The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), causing coronavirus disease 2019 (COVID-19) infection has resulted in a global pandemic, and it has been shown that patients with comorbidities have worse clinical outcomes from COVID-19 compared with otherwise healthy patients. Peripheral artery disease (PAD) is an atherosclerotic occlusive disease in the periphery affecting 8 to 12 million U.S. adults. However, whether PAD patients have worse clinical outcomes with SARS-CoV-2 infection remains unknown. Accordingly, the primary aim of our study was to examine the clinical outcomes of COVID-19 patients with PAD and determine whether they have an increased risk of mortality, hospitalization, and ventilator dependence.

Methods: A real-time search and analysis were performed for patients diagnosed with COVID-19 using the TriNetX (Cambridge, Mass) research network, a global federated health research network providing access to electronic medical records (diagnoses, procedures, medications, laboratory values) from ~63 million patients in 45 large healthcare organizations. The TriNetX platform only uses aggregated counts and statistical summaries of de-identified information. We identified COVID-19 patients (age, ≥ 60 years) with preexisting PAD (n = 964) and without PAD (n = 52,667). The two groups were compared for the risk of 28-day mortality, hospitalization, and ventilator dependence with and without propensity score matching for confounding factors.

Results: We used propensity score matching to match the COVID-19 patients with and without PAD for age, sex, race, and comorbidities. Before propensity score matching, COVID-19 patients with PAD had significantly higher mortality (risk ratio [RR], 2.09; 95% confidence interval [CI], 1.78-2.46; $P < .0001$), hospitalization (RR, 1.54; 95% CI, 1.46-1.63; $P < .0001$), and ventilator dependence (RR, 2.06; 95% CI, 1.61-2.64; $P < .0001$) compared with the COVID-19 patients without PAD. After propensity score matching, the COVID-19 patients with PAD still had a greater risk of 28-day hospitalization (RR, 1.24; 95% CI, 1.14-1.34; $P < .0001$) compared with the COVID-19 patients without PAD.

Conclusions: In general, COVID-19 patients with PAD have a lower survival probability, a higher rate of hospital admission, and a higher likelihood of requiring a ventilator compared with COVID-19 patients without PAD. Moreover, even after adjusting for comorbidities and confounding factors, compared with the non-PAD COVID-19 patients, the COVID-19 patients with PAD had a greater chance of requiring hospital admission. This finding suggests that PAD is an important risk factor for short-term hospital admission for patients with COVID-19.

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The Coronavirus Disease 2019 Likelihood of Thrombosis Calculator: Predicting Venous Thromboembolism Risk in Hospitalized Patients With Coronavirus Disease 2019

Richard A. Meena, Mengyu Di, Rachel E. Patzer, Manila Gaddh, Fadi B. Nahab, Olamide Alabi. Emory University, Atlanta, Ga

Objective: Emerging data have suggested that venous thromboembolism (VTE) occurrence in those with coronavirus disease 2019 (COVID-19) is associated with higher mortality rates. However, a paucity of data is available exploring which patients with COVID-19 have the highest risk of VTE development. Furthermore, no clear consensus has been reached regarding which patients warrant more or less aggressive antithrombotic therapy. We sought to develop a risk model to help clinicians predict which patients with COVID-19 might be more prone to VTE development.

Methods: A prospectively maintained registry of all COVID-19-related admissions between March and September 2020 was reviewed. Administrative database coding and medical record review were used to individually confirm the VTE diagnosis. Routine venous duplex ultrasound surveillance was not performed. Univariate and multivariate analyses