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Vascular Telehealth Improves Outpatient Visit Compliance Without Sociodemographic Discrepancies

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Objective: The COVID-19 (coronavirus disease 2019) pandemic has led to a rapid expansion in telemedicine across all medical fields but has also exposed telehealthcare disparities, with differing access to technology across racial and ethnic groups. The objective of our study was to investigate the sociodemographic aspects of vascular surgery outpatient telehealth evaluations during the COVID-19 pandemic.

Methods: Consecutive patients who had undergone outpatient vascular surgery evaluation from February 24, 2020 (the launch of our telemedicine program) to July 1, 2020 were reviewed. The baseline demographic and outcomes were obtained from the electronic medical records. The use of telehealth and in-person evaluations was defined according to the patient’s index visit during the study period. Medical visit compliance was established by completion of the telehealth or in-person encounter. Analysis was performed using χ² tests and logistic regression.

Results: A total of 4964 patients (10,801 visits) had scheduled an outpatient vascular appointment during the study period. The average age of the cohort was 68.4 ± 14.1 years, and 55.9% were male. Black and Latino patients constituted 422 (8.7%) and 23 (0.48%) of the population. Of the 4964 patients, 257 (5.2%) had had telehealth encounters; the rest had had in-person visits. No age, sex, or racial differences were found between the patients undergoing telehealth encounters and those undergoing in-person visits. Of the 4964 patients, 2400 (48.4%) had completed their scheduled medical visits. The telehealth visits had had a significantly greater proportion of completed medical visits compared with the in-person visits (77.8% vs 46.7%). On unadjusted analysis, younger age and male sex were significantly associated with greater odds of visit completion. On multivariate analysis, telemedicine patient evaluation was significantly associated with increased odds of medical appointment completion compared with in-person visits (odds ratio, 3.93; 95% confidence interval, 2.90-5.32) after adjusting for age, sex, race, and ethnicity.

Table. Predictors of vascular surgery outpatient medical visit completion*

| Predictor                  | Adjusted analysis: OR (95% CI) | P value |
|----------------------------|---------------------------------|---------|
| Telemmedicine evaluation    | 3.93 (2.90-5.32)                | < 0.001 |
| Age                        | 0.990 (0.986-0.994)             | < 0.001 |
| Female sex                 | 0.88 (0.79-0.99)                | 0.03    |
| Black race                 | 1.06 (0.86-1.30)                | 0.58    |

CI: Confidence interval. OR: odds ratio.
*In-person evaluation, male sex, and white race were the reference categories for the respective categorical variables in the logistic regression model.

Conclusions: The vascular surgery outpatient telehealth evaluation appeared to improve medical visit completion in our region without discernible sociodemographic disparities. Further studies are required to confirm whether telemedicine expansion has improved access to care in other geographic areas.

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Lower Hospital and Operating Room Charges for Patients Undergoing Carotid Repair With Carotid Endarterectomy Versus Transcervical Carotid Artery Revascularization

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Objective: Transcervical carotid artery revascularization (TCAR) has become an increasingly popular method for the treatment of carotid artery stenosis, especially because trial data have demonstrated a stroke risk comparable to that for carotid endarterectomy (CEA). Recent data have suggested that TCAR might be cost-effective; however, the costs associated with using this new technology have not been thoroughly evaluated.

Methods: A retrospective cohort review was conducted of patients at a single institution undergoing either TCAR or CEA from January 2019 to December 2020. Patient demographics, including race, gender, comorbidities, length of stay, and complications, were recorded. Additionally, the total operating room (OR) charges and hospitalization charges were recorded. Patients who had undergone combined procedures (coronary artery bypass grafting or transcatheter aortic valve replacement during hospitalization) were excluded.

Results: Of 234 patients, 38 had undergone TCAR and 196 had undergone CEA. Both cohorts were well matched for demographics and comorbid conditions. The length of stay was similar between the TCAR and CEA cohorts (1.32 vs 1.57 days; P = 0.254). The overall OR charges were greater for the TCAR group than for the CEA group ($60,996.72 vs $49,078.75; P < 0.001). The total hospital charges were similar for the TCAR group vs the CEA group ($67,921.38 vs 63,308.97; P = 0.317). When selecting for patients with a single-day length of stay, the total hospital charges were greater for TCAR than for CEA ($65,278.17 vs $55,865.73; P < 0.001; Fig). In the TCAR group, the primary reason for the overall difference in costs appeared to be the OR charges. The hospital charges after the exclusion of the OR charges were similar between the TCAR and CEA groups ($4188.71 vs $6604.38; P = 0.08). One notable difference was that the TCAR group was more likely to require a higher level of OR billing than the CEA group (15% vs 5%; P = 0.03).

Conclusions: The hospital charges were similar for patients who had undergone TCAR vs CEA overall but were lower for the CEA group when examining patients with only 1 day in the hospital. The primary reason for this charge difference appeared to be the OR charges, which were significantly greater for the patients who had undergone TCAR ($60,996.72 vs $49,078.75; P < 0.001). Cost containing efforts for treating patients with carotid artery stenosis should focus on reducing the charges associated with TCAR.

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