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Single-state Transcarotid Artery Revascularization Experience: Outcomes and Impact on Carotid Procedural and Operative Volumes

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Nine-item shared decision-making questionnaire (SDM-Q-9) was used to gauge subjective patient-specific engagement in shared decision-making after the consultation.

Results: The physicians spent an average of 19 ± 9 minutes and 46 ± 52 seconds per patient and an average of 10 ± 6 minutes and 49 ± 35 seconds talking to the patient. The providers used formalized language about 8.5 ± 7.4 times per encounter, checked for understanding only 5.25 ± 4.71 times, and asked far more close-ended than open-ended questions (11.13 ± 6.3 vs 4.625 ± 2.6). Providers accounted for 46.39% ± 5% of the total utterances and interrupted patients an average of 5.5 ± 4 times per encounter. The patients and their companions accounted for 53.61% ± 5% of the total utterances and asked an average of 10.6 ± 10.5 clarification questions. The average SDM-Q-9 Likert score per patient was 2.79 ± 0.33 on a range of −3 to +3, with positive scores indicating agreement and negative scores indicating dissent. On average, patients strongly (+2) or completely (+3) agreed that providers had covered the nine criteria.

Conclusions: The SDM-Q-9 data showed that patients mostly believed their provider was adequate in shared decision-making behavior. However, the doctor–patient dialogue tended to be more physician centered. Physicians spoke 54.7% of time, asked closed-ended questions that elicited "yes/no" or brief responses, continuously interrupted patient narratives, and rarely checked for understanding from their patients. These subliminal behaviors restrict patient participation in shared decision-making.

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Single-state Transcarotid Artery Revascularization Experience: Outcomes and Impact on Carotid Procedural and Operative Volumes

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Objectives: Transcarotid artery revascularization (TCAR) is an emerging novel approach to carotid intervention, adopted and well-suited for high-risk patients. Our objective was to assess the outcomes of TCAR and determine its impact on the volume of carotid endarterectomy (CEA) and non-TCAR carotid artery stenting (CAS) in a single-state experience.

Methods: A large statewide quality consortium registry was queried. The indications and outcomes of TCAR compared with CEA and non-TCAR CAS from January 2018 to October 2019 were reviewed. Non-TCAR CAS included transfemoral, transbrachial stenting and transcarotid stenting without the flow reversal technique. We also assessed the impact of TCAR on the trend of CEA and non-TCAR CAS performed, analyzing data from 2012 to 2019. Outcome comparisons were performed using the χ^2 and Mann-Whitney *U* tests, depending on the distribution of the outcomes.

Results: A total of 438 TCARs were performed by 39 physicians in 16 hospitals; 60% of the patients were asymptomatic and 40% symptomatic. The TCAR indication was physiologic high risk for 369 patients (84%) and restenosis for 69 patients (16%), with most occurring after prior CEA (94%). Of the non-TCAR CAS cases, 94% were performed via transfemoral access. The patients undergoing non-TCAR CAS had the highest 30-day mortality ($P < .001$) and the highest incidence of 30-day new neurologic deficits ($P = .008$) compared with the patients undergoing CEA and TCAR. CEA had the lowest myocardial infarction rate ($P = .015$; Table). The number of TCAR procedures performed and the number of physicians and hospitals performing them increased during the 2-year period. Since the introduction of TCAR, no significant frequency decrease has occurred in the number of non-TCAR CAS or CEA cases by hospitals or physicians (Fig). However, a significant negative trend was found in the number of CEAs performed by physicians since 2012 ($P < .001$; Fig).

Conclusions: TCAR is a safe method of carotid revascularization and is becoming an increasingly used method. TCAR has not affected the CEA hospital or physician volume since its introduction. CEA volumes and physician usage are declining, which could have future credentialing implications. In the present single-state experience, TCAR compared favorably with CEA and non-TCAR CAS might be less appealing because of its higher neurologic event rate.

Table. Outcomes

Variable	CEA (n = 4405)	Non-TCAR CAS (n = 1162)	TCAR (n = 438)	*P* value
30-Day mortality	50 (1.21)	37 (3.18)	4 (0.91)	<.001
30-Day myocardial infarction	31 (0.81)	17 (1.8)	6 (1.48)	.015
30-Day new neurologic deficit	163 (4.23)	62 (6.55)	16 (3.97)	.008

CAS, Carotid artery stenting; *CEA,* carotid endarterectomy; *TCAR,* transcarotid artery revascularization.
Data presented as number (%).

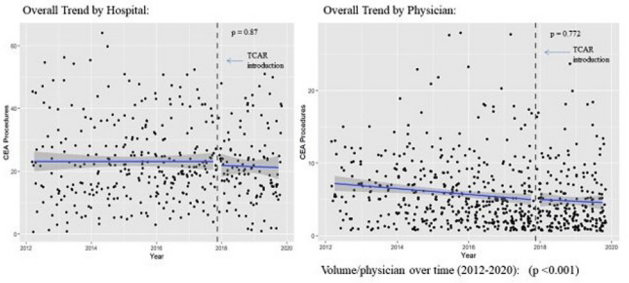

Fig. Effect of Transcarotid artery revascularization (TCAR) introduction on carotid endarterectomy (CEA) volume.

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Wells Clinical Probability and D-dimer Testing: Risk Stratification for Acute Lower Extremity Deep Vein Thrombosis

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Objectives: Current vascular guidelines recommend duplex ultrasound (DUS) to rule out acute lower extremity deep vein thrombosis (DVT). The combined use of D-dimer levels with Wells clinical probability scores has been proposed as an alternative method to exclude DVT and minimize the use of DUS in low-risk patients. We hypothesized that high-risk patients who would benefit from further evaluation for DVT with DUS can be reliably identified using a combination of the plasma D-dimer level and Wells score.

Methods: A prospective observational study was performed. Outpatients presenting to the emergency department with a chief complaint concerning for acute lower extremity DVT underwent risk stratification into three groups on the basis of pretest probability using the Wells score and plasma D-dimer level. All patients were evaluated with whole leg ultrasound to the confirm diagnosis.

Results: Of 3087 patients, 74.2% were classified as low risk, 18.6% as moderate risk, and 7.2% as high risk. The prevalence of DVT was 7.3% on completion of DUS. The negative predictive value for a negative D-dimer level and negative Wells score was 99.8%. A positive D-dimer level with a positive Wells score had a sensitivity and specificity of 97.4% and 91.9% for DVT, respectively. The plasma D-dimer levels correlated with the DVT level ($\eta^2 = 0.22$) and were highest in those with proximal DVT.

Conclusions: The combined use of the Wells clinical probability score and plasma D-dimer level is a safe and effective method of risk stratifying emergency room patients with lower extremity symptoms concerning for acute DVT. Patients with a low probability Wells score and negative plasma D-dimer level are unlikely to benefit from DUS, and patients with a positive D-dimer level and Wells score would benefit from whole leg DUS to rule out high-risk thrombi.

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