ARTIFICIAL INTELLIGENCE HAS DECISIVELY CHANGED THE TRANSMISSION OF INFORMATION AND KNOWLEDGE

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Two months ago, a television producer asked me to comment on a news story published by an AI-generated news network. Upon reviewing the story, I realized it was based on the results of the CREST-2[1] study published in the *New England Journal of Medicine*. I was astonished to read the article; the title alone highlighted the numerous benefits of carotid angioplasty over carotid endarterectomy. Among other errors, the article failed to distinguish between the benefits of carotid angioplasty and carotid endarterectomy and noted that the study reported beneficial results in asymptomatic patients. However, I was even more surprised when I read the Society for Vascular Surgery[2] (SVS) editorial on this study. Later, at the start of the interview, the first thing I pointed out to the reporter was that the news story did not accurately reflect the results presented in the academic article and, worse still, that mixing symptomatic and asymptomatic patients was an even greater error. As you know, it was very difficult to explain all these points in a television format, but I tried. Most interestingly, almost simultaneously, in late January, the results of the CREST-2 study were replicated on the websites and apps of societies for Cardiology, Interventional Cardiology, Interventional Radiology, and Neurointerventionalism, particularly in countries where transcarotid revascularization is not yet widespread. This simple account illustrates the fragility of the specialty of vascular surgery in the face of constant industry attacks, which support practices and procedures performed by other medical specialties that interpret evidence-based medicine only when it suits them. None of these stakeholders reflected on the results of the CREST-1 study.[3,4] Let's reflect on the results of the CREST-2 study, endorse the findings published by the SVS, and disseminate them to the entire community:

- The only database evaluating real-world outcomes of transfemoral carotid angioplasty (TF-CAS), transcatheter carotid angioplasty (TCAR), and carotid endarterectomy (CEA) is the SVS's Vascular Quality Initiative.[3,4] According to VQI data and numerous published articles involving thousands of patients, both CEA and TCAR have consistently demonstrated superior outcomes compared to TF-CAS, in both asymptomatic and symptomatic patients, and across standard-risk and high-risk patients.

Received: 02/08/2026 *Accepted: 02/20/2026* *https://doi.org/10.55200/raccv.v24.n1.0119*

- It is unlikely that the superior medical management observed in CREST-2 will be replicated in clinical practice outside of a controlled study such as this one. Medical treatment has not advanced as much as anticipated, as the annual risk of stroke in the Asymptomatic Carotid Artery Study (ACAS) was 2% and decreased to less than 1% over time. The CREST-2 study achieved an annual stroke risk with medical treatment of 1.7% in the TF-CAS group and 1.5% in the CEA group. Therefore, even with medical treatment that is unlikely to be reproducible, revascularization provided a small benefit.
- The stroke rate for TF-CAS[2-5] has been reported to be twice that of CEA in nearly all randomized trials before CREST-2; statistically significant differences were observed more consistently in symptomatic patients, who have higher baseline event rates. Trials in asymptomatic patients did not have sufficient statistical power to detect a difference in stroke incidence.
- Notable differences in operator selection and anatomical considerations were observed between TFA-CAS and CEA. These strict and unequal exclusion criteria create a study population that differs significantly from that of real-world patients, reducing the generalizability of the results and making them less applicable to routine clinical decision-making.
- We are concerned that less experienced TF-CAS operators may apply the CREST-2[2,6] recommendations to a broad group of asymptomatic patients, without the same careful selection of low-risk anatomies.
- Kakkos et al.[7] summarized nine randomized carotid trials and concluded that the 30-day stroke/death rate was significantly higher for TF-CAS (2.9%) than for CEA (1.9%; odds ratio [OR], 1.6; $P = 0.044$); the 30-day stroke rate was significantly higher for TF-CAS (2.9%) than for CEA (1.8%; OR, 1.6; $p = 0.032$); the rate of myocardial infarction at 30 days was non-significantly lower for CAS (0.66%) compared with CEA (1.5%; OR, 0.5; $p = 0$ 0.105); and the rate of stroke/death at 30 days plus ipsilateral stroke during 1-year follow-up was significantly higher for TF-CAS (3.6%) than for CEA (2.4%; OR, 1.5; $p = 0.04$).
- Stent-assisted carotid angioplasty (TCA), whether TF-CAS or TCAR, is less favorable in cases of severe calcification, angulation, or tortuosity of the internal carotid artery than CEA.[8,9] TF-CAS may be contraindicated or carry a higher risk in diseased, tortuous, or angulated aortic arch entry vessels.
- CEA is less favorable in the presence of severe cardiac or pulmonary disease, prior neck radiation, prior major neck surgery, highly cephalic lesions, cervical spine immobility, contralateral vocal cord paralysis, and, possibly, occlusion of the contralateral internal carotid artery. These strengths and weaknesses highlight the value of having all revascularization strategies available, allowing physicians to select the most appropriate modality for each patient.

It is indisputable that artificial intelligence has decisively changed the transmission of information and knowledge. In this field, we are walking on a fine line. Scientific truth is based primarily on the constant raising of doubts, "a suspect truth," as Karl Popper put it. We must not allow dogma to take us back to the Middle Ages. As experienced professionals, we always support the training of future generations. We also have an obligation to defend the values and scope of our specialty. We must ensure that our medical residents can grow and develop, feel pride in being vascular surgeons, and, above all, in belonging to the Argentine College of Cardiovascular Surgeons.

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