Cerebrovasc Dis 2014;37:391

DOI: 10.1159/000362112

Alterations in Treatment Preferences for Intracranial Atherosclerotic Disease following SAMMPRIS

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I have read with interest a recent article in *Cerebrovascular Diseases* by Turan et al. [1] titled 'Intracranial Stenosis: Impact of Randomized Trials on Treatment Preferences of US Neurologists and Neurointerventionists'. The authors report the outcomes of treatment preference surveys from neurologists and neurointerventionists from three eras demarcated by two major randomized controlled trials of therapies for symptomatic intracranial atherosclerotic disease (ICAD): the Warfarin-Aspirin Symptomatic Intracranial Disease (WASID) and Stenting and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trials [2, 3]. The three time periods were pre-WASID, post-WASID, and post-SAMMPRIS. In the current (post-SAMMPRIS) era of ICAD management, the role of endovascular treatment remains unknown [4]. A survey of over 200 attendees of the ICAD symposium at the 2012 International Stroke Conference by Zaidat et al. [5] showed, in congruence with the present study, that the results from SAMMPRIS significantly dampened the enthusiasm of neurologists and neurointerventionists to prescribe stenting for the treatment of symptomatic ICAD. Therefore, despite concerns regarding the limitations of the SAMMPRIS trial, including the stent design, variability in operator experience and heterogeneity of pre-intervention medical therapy, it is clear that SAMMPRIS has had a widespread and durable impact on the management of ICAD [6].

We recently reviewed all ICAD stenting studies published after SAMMPRIS [7]. A total of 19 case series comprising 2,196 patients with 2,314 treated ICAD lesions were identified for analysis. The minimum stenosis of the treated artery was 50–70%. The stent design varied widely, with 38 different devices used across all included studies. Perhaps in response to the self-expanding design of the Wingspan stent (Boston Scientific, Natick, Mass., USA) used in SAMMPRIS, the vast majority (87%) of devices were balloon-expandable stents. Coronary, intracranial, and biliary stent types were used in 71, 24 and 5% of studies, respectively. The rates of technical success were generally very high with a median of 98% (range 87–100%). The median rates of ischemic events in any territory, ipsilateral ischemic events, and symptomatic in-stent restenosis were 9, 5 and 3%, respectively. Our study was limited by its retrospective nature, the wide variability in reported follow-up durations and patient and radiographic outcomes, and the inconsistent timing of the treatments performed in relation to SAMMPRIS.

Nonetheless, we believe it represents the ICAD stenting practices of modern-day neurointerventionists in the post-SAMMPRIS era.

Despite the improved outcomes of current medical management compared to that of the pre-WASID era, including dual antiplatelet therapy and medical optimization of modifiable risk factors, the rates of recurrent cerebral ischemic events in patients with symptomatic ICAD remain relatively high [3]. The currently available therapeutic options for those who have failed maximal medical therapy are angioplasty alone or angioplasty and stenting. While select case series have reported successful outcomes with either approach for medically refractory ICAD patients, there have yet to be any rigorous studies, on par with WASID or SAMMPRIS, to support the safety and efficacy of either intervention. Future randomized controlled trials of symptomatic ICAD management may benefit from using a standardized angiographic classification of ICAD lesions, evaluating the effect of stent design on interventional outcomes, evaluating the potential role of angioplasty without stenting, and including only patients who have documented failure of maximal medical therapy [8, 9]. Studies, such as the present one, reinforce the impact that prospective, randomized, multicenter clinical trials have on the practices of physicians who treat cerebrovascular diseases.

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