

## Comparison of Risk Factor Control in the Year After Discharge for Ischemic Stroke Versus Acute Myocardial Infarction

Acute myocardial infarction (AMI) and ischemic stroke share many common vascular factors, whose control is critical in secondary prevention of both conditions. In this observational study, a cohort of 40230 patients from 75 Veteran Health Administration centers with 5 diagnoses (stroke, transient ischemic attack, AMI, congestive heart failure, and chronic obstructive pulmonary disease exacerbation) were followed for 1 year after the index event. The major end points of interest were control of major cardiovascular risk factors (hypertension, diabetes mellitus, hyperlipidemia) and healthcare utilization. Two thousand one hundred twenty-seven patients had an incident ischemic stroke and 4169 an incident AMI. In the year following their index hospitalization, stroke survivors were significantly less likely than their AMI counterparts to achieve blood pressure control, even when adjusting for potential confounders. No differences were noted in hyperlipidemia management, whereas stroke survivors with diabetes mellitus had higher odds of achieving target glycemic control. AMI survivors exhibited clearly higher healthcare utilization rates, driven mainly by high frequency of cardiology visits. Of interest, cardiology visits were associated with improved blood pressure control, primary care visits had a neutral effect and neurology visits were associated with worse blood pressure control. The findings of the study offer food for thought: they suggest that control of hypertension, which has been demonstrated as the most important contributor to stroke risk at a population level is lagging compared with AMI. Furthermore, the study findings suggest that this might be because of a combination of less frequent follow-up and less efficient blood pressure control by neurologists and primary care providers. Although these findings might not necessarily be generalizable to non-Veteran Health Administration patient populations they highlight the need for close follow-up and rigorous efforts to achieve hypertension control in stroke survivors after the paradigm of the cardiological community in patients with AMI. See p 296.

## Cerebrovascular Outcomes With Proton Pump Inhibitors and Thienopyridines: A Systematic Review and Meta-Analysis

Thienopyridine antiplatelets (mainly clopidogrel and prasugrel) are widely used in the treatment and secondary prevention of cardiovascular and cerebrovascular disease. Their activity relies on transformation of prodrugs to active forms through the action of the CYP2C19 and CYP3A4 isoenzymes. Proton pump inhibitors (PPIs) are available in over-the-counter forms and can be obtained without specific prescription by a medical provider. These widely used and generally perceived as benign medications competitively inhibit the P450 enzyme pathway and in particular the CYP2C19 isoform, impairing

the critical step of thienopyridine activation. In this systematic review and meta-analysis Malhotra et al attempted to elucidate the effect of PPI coprescription on the safety and efficacy of thienopyridines focused on cerebrovascular outcomes. The authors identified a large sample of  $\approx 131\,000$  patients from 22 studies. Their findings confirm the clinical suspicion: in adjusted analyses, concomitant PPI use resulted in 1.3 higher odds of stroke and a similar magnitude increase in the risk of composite stroke, myocardial infarction, and cardiovascular disease; the effect was maintained within individual thienopyridine subgroups. The findings of Malhotra et al highlight the fact that PPI use should not be taken lightly, especially in patients with cardiovascular using thienopyridine antiplatelets. Prescription indications should be scrutinized and duration of use shortened to the minimum recommended period of time. If patient symptoms mandate, alternative antacid options should be explored, or, at the very least, pantoprazole could be considered, given its weaker inhibitory action on CYP2C19. Ideally, a future prospective randomized controlled trial should be conducted to address the safety of PPI use in patients with ischemic stroke. See p 312.

## Periodontal Disease, Regular Dental Care Use, and Incident Ischemic Stroke

In this analysis from the ARIC (Atherosclerosis Risk in the Communities) study, Sen et al address an important but often neglected issue: The link between periodontal disease, dental care use, and stroke risk. The authors approach the question from 2 different angles: The first was association between different states of periodontal disease severity and ischemic stroke risk. This was conducted in the context of ancillary study of ARIC, DENTAL-ARIC, including patients amenable to detailed dental examination. Adjusting for imbalances in other stroke risk factors, a clear association between more severe periodontal disease and increased ( $\approx 2$ -fold higher) risk was demonstrated. Moreover, this association was more potent for the 2 forms of periodontal disease with highest inflammation burden, suggesting that the causative link is likely inflammation. The second approach explored the association between dental care utilization and incident stroke risk in the entire ARIC cohort, comprising 11 565 participants. Over a 15-year follow-up period, regular dental care users were less likely to suffer an ischemic stroke (adjusted hazard ratio, 0.77; 95% confidence interval, 0.63–0.94). The findings of the study highlight the importance of periodontal disease as a stroke risk factor and elucidate both the possible pathophysiologic mechanism (increased inflammation) and the mechanism by which the problem can be remedied: attention to oral hygiene and regular use of routine preventive dental care. Although the findings suggest that the roots of dental care underutilization are largely socioeconomic, it seems reasonable for practicing physicians to counsel their patients on the merits of its routine use. Results of subsequent prospective randomized controlled trials are awaited to further validate these observations. See p 355.

# Stroke

JOURNAL OF THE AMERICAN HEART ASSOCIATION



## ***Stroke*: Highlights of Selected Articles**

*Stroke*. 2018;49:281

doi: 10.1161/STROKEAHA.117.020453

*Stroke* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231

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Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:

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