Embolic strokes of undetermined source comprise a subset of cryptogenic ischemic strokes. It is thought that some embolic strokes of undetermined source could be due to left atrial thromboembolism without atrial fibrillation. The authors sought to determine whether a marker of left atrial pathological changes could pose as a surrogate marker of nonarrhythmic thromboembolism in embolic strokes of undetermined source. To this end, Kamel et al studied the association between electrocardiographic P-wave terminal force in lead V1 (PTFV1), which has been associated with ischemic stroke in the absence of atrial fibrillation, and cryptogenic ischemic strokes in the Northern Manhattan Study population. The authors designed a case–cohort study, randomly choosing a subcohort of participants who had electrocardiography (n=798), and all subjects who developed ischemic strokes in follow-up (n=241). Participants with atrial fibrillation at baseline or during follow-up were excluded. The study showed that in adjusted models, there was an association between PTFV1 and a composite of cryptogenic or cardioembolic stroke (adjusted hazard ratio per SD, 1.31; 95% confidence interval, 1.08–1.58). For cardioembolic or cryptogenic stroke, PTFV1 was associated with a 50% increase in risk (hazard ratio 1.56; 95% confidence interval, 1.25–1.96). Interestingly, the associations between electrocardiographic left atrial abnormality and most stroke subtypes were attenuated after adjustment for left atrial size on echocardiogram, suggesting that PTFV1 may, in part, reflect left atrial dilatation. This interesting study, therefore, indicates that the strong association of PTFV1 with cardioembolic and cryptogenic strokes supports a specific link with left atrial thromboembolism, in the absence of atrial fibrillation. PTFV1 had good inter- and intrarater reliability in this study. Therefore, PTFV1 may be considered as a potential surrogate marker for atrial thromboembolism and, therefore possibly modifying therapeutic strategies in patients with embolic strokes of undetermined source at high risk for recurrent thromboembolism. See p 3208.

Effect of Hyperacute Administration (Within 6 Hours) of Transdermal Glyceryl Trinitrate, a Nitric Oxide Donor, on Outcome After Stroke: Subgroup Analysis of the Efficacy of Nitric Oxide in Stroke (ENOS) Trial

Neuroprotection continues to be an area of active research in acute stroke management. One such study was the Efficacy of Nitric Oxide in Stroke (ENOS) trial. This was a single-blind, multinational study that examined the safety and efficacy of transdermal glyceryl trinitrate (GTN) versus no GTN within 48 hours, and for a total of 7 days, in 4011 patients with acute ischemic or hemorrhagic stroke. GTN was hoped to have neuroprotective properties because nitric oxide donors have been shown to reduce stroke lesion size, increase and maintain cerebral blood flow, and improve arterial compliance, both in animal and in human studies. In ENOS, GTN was safe to administer but did not alter the modified Rankin Scale score at 90 days. Woodhouse et al studied a subset of 273 patients from ENOS who were enrolled in the study within 6 hours, 144 of which were randomized to GTN. Patients receiving early GTN had a significant shift to a lower modified Rankin Scale score at 90 days than no GTN (adjusted odds ratio, 0.51; 95% confidence interval, 0.32–0.80; mean modified Rankin Scale score 2.6 versus 3.2, respectively). Early treatment with GTN was also associated with improvements in activities of daily living, quality of life, cognition and mood at 90 days. Furthermore, early GTN was safe and reduced the rates of death and serious adverse events. Given that these exciting results are from a subgroup analysis of a clinical trial, they need to be replicated. Hence, this finding will be explored in the Rapid Intervention With Glyceryl Trinitrate in Hypertensive Stroke Trial 2 (RIGHT-2) trial, which will prospectively assess the safety and efficacy of GTN in patients with ultra-acute stroke in the prehospital phase. See p 3194.
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