18FDG-PET-CT: An Imaging Biomarker of High-Risk Carotid Plaques. Correlation to Symptoms and Microembolic Signals

Various radiographic methods have been performed to identify vulnerable plaque in carotid arteries. Positron emission tomography using 18fluoro-2-deoxy-d-glucose radiotracer can detect inflammation in carotid plaques. The presence of microembolic signals (MES) seen on transcranial Doppler is a strong predictor of stroke in asymptomatic carotid artery disease. In this study by Müller et al, 18fluoro-2-deoxy-d-glucose positron emission tomography–computed tomography and MES were performed in patients with 50% to 99% symptomatic or asymptomatic stenosis. MES-positive lesions were found in 16% of stenoses. There was significantly more MES-positive stenosis in the symptomatic group compared with the asymptomatic group (25% versus 9%). Target:background ratio values, the measure of 18fluoro-2-deoxy-d-glucose uptake, were higher in symptomatic compared with asymptomatic stenosis and in MES-positive compared with MES-negative plaques. Target:background ratio values were also higher in asymptomatic MES-positive stenosis when compared with that in MES negative. These results show that 18fluoro-2-deoxy-d-glucose positron emission tomography–computed tomography can identify high-risk carotid plaques. Additional larger prospective studies are needed to validate these results before incorporating it into everyday clinical practice. See p 3561.

Randomized Controlled Trial of Very Early Rehabilitation After Intracerebral Hemorrhage Stroke

Early rehabilitation after stroke has been associated with improved functional outcomes. However, because previous studies included few patients with intracerebral hemorrhage (ICH), it is not known whether the benefits of early rehabilitation apply to patients with CH. Liu et al conducted a prospective, multicenter, randomized controlled study in China that compared very early rehabilitation with standard care in patients with ICH. Two hundred forty-three patients were randomized to either very early rehabilitation that was begun within 48 hours of ICH or standard care rehabilitation, which began after 7 days. Length of stay was on average 10 days shorter in the very early rehabilitation group. At 6 months, patients with standard care rehabilitation were more likely to have died (adjusted hazard ratio, 4.44). Patients who received very early rehabilitation reported significantly better quality of life, independence with activities of daily living and improved mental health outcomes at 6 months. In sum, early rehabilitation after ICH seems safe and is associated with shorter length of stay, lower mortality, and improved outcome. Additional studies are warranted to corroborate these findings in other populations. See p 3502.

Infection After Intracerebral Hemorrhage: Risk Factors and Association With Outcomes in the Ethnic/Racial Variations of Intracerebral Hemorrhage Study

Medical complications after stroke are strongly associated with outcome. However, there is limited information on the effect of infections after ICH. This study by Lord et al sought to determine the rate of post-ICH infections and their effect on patient outcomes in the Ethnic/Racial Variations of Intracerebral Hemorrhage (ERICH) study. ERICH is a prospective, multicenter, National Institutes of Health (NIH)–funded study of ICH. Poststroke infections occurred in 31% (245/800) patients. Respiratory infections and urinary tract infections were most common. Admission factors associated with post-ICH infection in multivariate models were ICH volume (odds ratio, 1.02 per mL), lower GCS (odds ratio, 0.91 per point), deep location (odds ratio, 1.90), and black race (odds ratio, 1.53). In multivariate models of admission and hospital factors, infections were associated with intubation, dysphagia, pulmonary edema, and deep vein thrombosis. Patients with infection were more likely to die in the hospital and were more likely to have poor 3-month outcome. Respiratory infections had worse outcomes than urinary tract infections. This study highlights the importance of vigorous prevention and treatment of infection. Additional larger studies are needed aimed at prevention methods for infection in patients after stroke. See p 3535.
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