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Stroke Update 2015

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MR CLEAN, ESCAPE, EXTEND-IA, SWIFT-PRIME, REVASCAT

As a breakthrough year for acute stroke treatment, five recent trials (MR CLEAN, ESCAPE, EXTEND-IA, SWIFT-PRIME, REVASCAT) demonstrated the efficacy of intra-arterial thrombectomy. These successful trials used stent retrievers in common, which may lead to the better reperfusion rate (58%~88%) and lower times to reperfusion (4.0-4.2 hours) compared with earlier trials. Documented arterial occlusion (proximal MCA or distal ICA) on baseline imaging (CTA, usually) was required for enrollment, which more likely to show benefit from endovascular therapy. In general, benefits were clear in patients receiving r-tPA before intra-arterial thrombectomy, therefore r-tPA should not be withheld if the patient meets criteria. It is probable that favorable results occur when intra-arterial thrombectomy is performed in a well-organized stroke center by a coordinated multidisciplinary team that extends from the prehospital stage to the endovascular suite, minimizes time to recanalization, uses stent-retriever devices, and avoids general anesthesia. In summary, intra-arterial thrombectomy is potently effective and should be offered to patients who have documented occlusion, have a relatively normal CT scan, and can have intra-arterial thrombectomy within 6 hours of last seen normal.

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BRIDGE, ORBIT-AF

It is uncertain whether bridging anticoagulation is necessary for patients with NVAF who need an interruption in warfarin treatment for an elective operation or elective invasive procedure. In BRIDGE trial, compared with bridging group, no-bridging group was noninferior in terms of arterial thromboembolism (0.4% vs. 0.3%; P =0.01 for noninferiority), while superior in terms of major bleeding (3.2% vs. 1.3%; RR 0.41; 95% CI 0.20-0.78; P= 0.005 for superiority). Prospective ORBIT-AF registry also did not support the use of routine bridging because bleeding events were more common in bridging than in non-bridging group (5.0% vs. 1.3%; adjusted OR 3.84; P<0.0001).

ARIC cohort

Subclinical brain infarctions and white matter hyperintensities have been associated with increased risk for stroke and

death. However, lesions smaller than 3mm are typically ignored. According to ARIC cohort study, stroke risk tripled with lesions smaller than 3 mm compared with no lesions (HR 3.47; 95% Cl 1.86-6.49; P〈0.001). Very small cerebrovascular lesions may be associated with increased risks for stroke and death.

CADISS

Extracranial carotid and vertebral artery dissection is an important cause of young-adult stroke, however, treatment is not standardized. CADISS trial enrolled 250 patients (118 carotid, 132 vertebral), and ipsilateral stroke recurrence occurred in only 4 patients (2%) at 3 month. Efficacy of antiplatelet or anticoagulant therapy did not show difference to prevent stroke or death (2% vs. 1%; *P*=0.63)

IMPROVE-IT

IMPROVE-IT trial enrolled 18,144 patients with acute coronary syndrome and followed-up for 7 years. LDL level was significantly lower in simvastatin-ezetimibe group as compared with simvastin-monotherapy group. Composite outcome occurred 32.7% in the simvastatin-ezetimibe group, as compared with 34.7% in the simvastatin-monotherapy group (HR 0.936; 95% CI 0.89-0.99; *P*= 0.016). Among endpoints, ischemic stroke reduction was most significant (HR 0.79; 95% CI 0.67-0.94; *P*=0.008). When added to statin therapy, ezetimibe resulted in incremental lowering of LDL cholesterol levels and improved cardiovascular outcomes including ischemic stroke.

AHA/ASA ICH guideline

Patients with ICH should have intermittent pneumatic compression for prevention of venous thromboembolism from admission. Graduated compression stockings are not beneficial. For ICH patients presenting with SBP between 150 and 220 mm Hg and without contraindication, acute lowering of SBP to 140 mm Hg is safe and can be effective for improving functional outcome. It is reasonable to consider the following risk factors for ICH recurrence: (1) lobar location; (2) older age; (3) presence and number of microbleeds on gradient echo MRI; (4) ongoing anticoagulation; and (5) presence of apolipoprotein E ε2 or ε4 alleles. Avoidance of long-term warfarin is recommended after warfarin-associated spontaneous lobar ICH. Anticoagulation after non-lobar ICH and antiplatelet monotherapy after any ICH might be considered, particularly when there are strong indications for these agents. Avoidance of oral anticoagulation for at least 4 weeks might decrease the risk of ICH recurrence. If indicated, aspirin monotherapy can probably be restarted in the days after ICH, although the optimal timing is uncertain.