AHA/ASA Guidelines for Stroke Prevention in Patients with Stroke and TIA

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Conflicts of Interest

- None

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AHA/ASA Guideline

Guidelines for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack

A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association

The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists.

Endorsed by the American Association of Neurological Surgeons and Congress of Neurological Surgeons

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Guideline Evidence Review

"The writing committee conducted a comprehensive review and synthesis of the relevant literature. The committee reviewed all compiled reports from computerized searches and conducted additional searches by hand... Searches were limited to English language sources and to human subjects. Literature citations were generally restricted to published manuscripts that appeared in journals listed in Index Medicus and reflected literature published as of April 1, 2013.…The references selected for this document are almost exclusively for peer-reviewed articles that are representative but not all-inclusive, with priority given to references with higher levels of evidence".

Methodology for AHA/ASA Guideline Documents

- Definition of Guidelines
  - Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.
- Formal evidence review
  - The document should describe in the preamble the scope, search terms, and methodology of the evidence review.
- PICOT(s) Questions to Drive Evidence Review
  - The Writing Committee for a Guideline will identify a list of critical questions to focus the review of the literature. It is anticipated that a subset of the critical questions in a Guideline will be in the PICOT(s) (Population, Intervention, Comparison, Outcome, Time) format

Classification of Recommendations and Levels of Evidence

SIZE OF TREATMENT EFFECT

ESTIMATE OF CERTAINTY (PRECISION) OF TREATMENT EFFECT

	CLASS I *Benefit >>> Risk* Procedure/Treatment **SHOULD** be performed/ administered	CLASS IIa *Benefit >> Risk* *Additional studies with focused objectives needed* **IT IS REASONABLE** to perform procedure/administer treatment	CLASS IIb *Benefit ≥ Risk* *Additional studies with broad objectives needed; additional registry data would be helpful* Procedure/Treatment **MAY BE CONSIDERED**	CLASS III *No Benefit* or CLASS III *Harm* Procedure/Test / Treatment COR III: No benefit — Not Helpful / No Proven Benefit COR III: Harm — Excess Cost w/o Benefit or Harmful / Harmful to Patients
LEVEL A Multiple populations evaluated* Data derived from multiple randomized clinical trials or meta-analyses	■ Recommendation that procedure or treatment is useful/effective ■ Sufficient evidence from multiple randomized trials or meta-analyses	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Sufficient evidence from multiple randomized trials or meta-analyses
LEVEL B Limited populations evaluated* Data derived from a single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is useful/effective ■ Evidence from single randomized trial or nonrandomized studies	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Evidence from single randomized trial or nonrandomized studies
LEVEL C Very limited populations evaluated* Only consensus opinion of experts, case studies, or standard of care	■ Recommendation that procedure or treatment is useful/effective ■ Only expert opinion, case studies, or standard of care	■ Recommendation in favor of treatment or procedure being useful/effective ■ Only diverging expert opinion, case studies, or standard of care	■ Recommendation's usefulness/efficacy less well established ■ Only diverging expert opinion, case studies, or standard of care	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Only expert opinion, case studies, or standard of care

Guideline Recommendations Relevant to Potential Causes of Cryptogenic Stroke

- Occult Atrial Fibrillation
- Aortic Arch Atheroma
- Paradoxical Embolism – Patent Foramen Ovale
- Hypercoagulable States

Occult Atrial Fibrillation

- ~10% of patients with acute ischemic stroke or TIA will have new AF detected during their hospital admission, and ~10% may be found to have AF if tested within 30 days of discharge by continuous ECG monitoring.
- In stroke or TIA patients with an indication for a pacemaker, interrogation of the device identifies ~30% incidence of occult AF over 1 year.

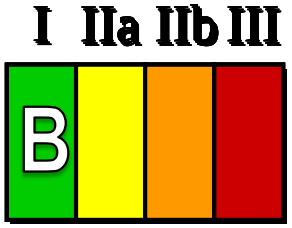
For patients who have experienced an acute ischemic stroke or TIA with no other apparent cause, prolonged rhythm monitoring (~30 days) for AF is reasonable within 6 months of the index event.

Aortic Arch Atheroma

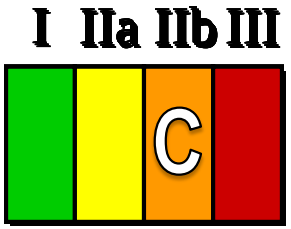
- Aortic plaque thickness ≥4 mm detected by TEE is associated with ~fourfold increased risk of recurrent ischemic stroke.

For patients with an ischemic stroke or TIA and evidence of aortic arch atheroma:

- Antiplatelet therapy is recommended.



- Statin therapy is recommended.



- The effectiveness of anticoagulation with warfarin, compared with antiplatelet therapy, is unknown.

Paradoxical Embolism – Patent Foramen Ovale

- PFO is present in 15% to 25% of the adult population
- Meta-analyses have demonstrated that the association between PFO and risk for cryptogenic ischemic stroke is stronger in younger patients (OR = 5.1 (95% CI, 3.3–7.8) than in older patients (OR = 2.0 (95% CI, 1.0–3.7).
- The association may be stronger when there is a coexistent atrial septal aneurysm

Paradoxical Embolism – Patent Foramen Ovale

- There are insufficient data to establish whether anti-coagulation is equivalent or superior to aspirin for secondary stroke prevention in patients with PFO.

- For patients with an ischemic stroke or TIA and a PFO who are not undergoing anticoagulation therapy, antiplatelet therapy is recommended.

- For patients with an ischemic stroke or TIA and both a PFO and a venous source of embolism, anticoagulation is indicated, depending on stroke characteristics.

- For patients with a cryptogenic ischemic stroke or TIA and a PFO without evidence for DVT, available data do not support a benefit for PFO closure

- In the setting of PFO and DVT, PFO closure by a transcatheter device might be considered, depending on the risk of recurrent DVT.

Hypercoagulable States

- Inherited thrombophilias
  - Factor V Leiden, prothrombin G20210A mutation, methylenetetrahydrofolate reductase [MTHFR] C677T mutation, protein C deficiency, protein S deficiency, antithrombin III deficiency

- Acquired thrombophilias
  - Antiphospholipid antibody
  - Hyperhomocysteimia

Hypercoagulable States

- The usefulness of screening for thrombophilic states in patients with ischemic stroke or TIA is unknown.

- Anticoagulation might be considered in patients who are found to have abnormal findings on coagulation testing after an initial ischemic stroke or TIA, depending on the abnormality and the clinical circumstances.

- Antiplatelet therapy is recommended for patients who are found to have abnormal findings on coagulation testing after an initial ischemic stroke or TIA if anticoagulation therapy is not administered.

Hypercoagulable States

- Routine screening for hyperhomocysteinemia among patients with a recent ischemic stroke or TIA is not indicated.

- In adults with a recent ischemic stroke or TIA who are known to have mild to moderate hyperhomocysteinemia, supplementation with folate, vitamin B6, and vitamin B12 safely reduces levels of homocysteine but has not been shown to prevent stroke.

- Routine testing for antiphospholipid antibodies is not recommended for patients with ischemic stroke or TIA who have no other manifestations of the APS and who have an alternative explanation for their ischemic event, such as atherosclerosis, carotid stenosis, or AF.

- For patients with ischemic stroke or TIA who meet the criteria for the APS, anticoagulant therapy might be considered depending on the perception of risk for recurrent thrombotic events and bleeding.

Get with the Guidelines - Stroke Achievement Measures

- Early antithrombotics: Percent of patients with ischemic stroke or TIA who receive antithrombotic therapy by the end of hospital day two.
- Antithrombotics: Percent of patients with an ischemic stroke or TIA prescribed antithrombotic therapy at discharge.
- Anticoagulation for atrial fibrillation/flutter: Percent of patients with an ischemic stroke or TIA with atrial fibrillation/flutter discharged on anticoagulation therapy
- Statin therapy: Percent of ischemic stroke or TIA patients with LDL ≥ 100, or LDL not measured, or on cholesterol-reducer prior to admission who are discharged on statin medication

Get with the Guidelines - Stroke 30-Day Measures

- Percent of patients with an ischemic stroke or TIA who are receiving antithrombotic therapy or who are prescribed it at the conclusion of the 30-day visit.
- Percent of patients with an ischemic stroke or TIA with atrial fibrillation/flutter who are receiving anticoagulation Therapy or who are prescribed it at the conclusion of the 30-day visit.
- Percent of ischemic stroke or TIA patients with LDL > 100, or LDL not measured who are receiving cholesterol-reducing drugs or who are prescribed it at the conclusion of the 30-day visit.
- Percent of patients stroke (all subtypes) and TIA who are prescribed one or more antihypertensives at the conclusion of the 30-day visit.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