

What We Know

- › A stroke is an episode of acute neurological dysfunction as a result of an interruption of cerebral blood flow. Strokes are broadly classified as ischemic and hemorrhagic. Ischemic strokes, which account for about 87% of all strokes, are most commonly caused by blockage of a cerebral artery by a blood clot or other embolus (for more information, see *Quick Lesson About ... Stroke, Ischemic*). Hemorrhagic strokes result from vascular rupture with bleeding into the brain (i.e., intracerebral hemorrhage) or subarachnoid space (i.e., subarachnoid hemorrhage); (for more information, see *Quick Lesson About ... Stroke, Hemorrhagic*)⁽³⁾
 - Stroke is the leading cause of severe disability among adults and is the fifth most common cause of death in the United States^(3,4)
- › Thrombosis plays a central role in the pathogenesis of ischemic stroke, and antithrombotic agents—including antiplatelet drugs (which prevent platelet aggregation and clot formation) and anticoagulants (which prevent blood from clotting by targeting clotting factors)—are commonly used in the primary and secondary prevention of stroke. Therefore, it might seem reasonable to assume that these medications would also be important in the treatment of ischemic stroke; however, aspirin and to a lesser extent clopidogrel (both antiplatelet drugs) are the only antithrombotic agents—oral or parenteral—used routinely in the treatment of acute ischemic stroke^(2,8)
 - Antithrombotic agents should be avoided in patients with hemorrhagic stroke because their use is associated with increased bleeding risk⁽²⁾
- › Early administration of oral aspirin in patients with acute ischemic stroke is associated with reduced risk of death, dependency, and recurrent stroke^(2,6,7,8)
 - Guidelines for treatment of acute ischemic stroke generally recommend the following with regard to aspirin therapy:
 - Oral aspirin should be administered within 24–48 hours in all patients with ischemic stroke who do not receive thrombolytic therapy with IV recombinant tissue plasminogen activator (rtPA), after hemorrhagic stroke has been excluded and the patient has passed dysphagia screening.^(2,6,7,8) (For more information on thrombolytic therapy, see *Quick Lesson About ... Stroke: Drug (Thrombolytic) Therapy and Evidence-Based Care Sheet: Stroke, Ischemic: Treatment with Thrombolysis*)
 - Aspirin can be administered rectally or by feeding tube if dysphagia is present^(2,7)
 - Aspirin should not be used as a substitute for other interventions, including IV thrombolytic therapy or mechanical thrombectomy⁽⁸⁾
 - Administration of aspirin and other antiplatelet agents should be delayed 24 hours after treatment with treatment with IV rtPA^(2,8)
 - In patients with minor noncardioembolic ischemic stroke who do not receive IV rtPA, dual antiplatelet therapy (aspirin and clopidogrel) should be started within 24 hours of stroke onset^(2,8)
 - In a randomized controlled trial including 4,881 patients with minor ischemic stroke or high-risk transient ischemic attack (TIA; i.e., brief episode of neurologic dysfunction caused by focal ischemia of brain, spinal cord, or retina without evidence of acute infarction on neuroimaging), those who received a combination of aspirin

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and clopidogrel were 25% less likely to experience a major ischemic event (ischemic stroke, myocardial infarction, or death from an ischemic vascular event) than those

who received aspirin alone over a follow-up of 90 days⁽⁵⁾

- The major concern when using antiplatelet drugs in patients with acute ischemic stroke is the potential for major bleeding, including intracranial and gastrointestinal hemorrhage^(1,4,5)
 - Patients with a history of aspirin-associated dyspepsia should be given a concurrent proton pump inhibitor⁽⁷⁾
- General contraindications to aspirin therapy, in addition to hemorrhagic stroke, include aspirin allergy, peptic ulcer disease or gastritis, congenital coagulopathies, and glucose-6-phosphatedehydrogenase deficiency⁽¹⁾
- › No current data support the routine use of anticoagulants in the treatment of acute ischemic stroke and current guidelines recommend against the use of anticoagulants in patients with acute ischemic stroke for reducing morbidity, mortality, and recurrent stroke^(2,6,8)
- In a Cochrane review of 24 randomized trials comparing early anticoagulation (including both oral and parenteral routes of administration) within 2 weeks of stroke onset to no early anticoagulation found no significant differences in death or disability or all-cause mortality, but a 2.6-fold increased risk of symptomatic intracranial hemorrhage and a 3-fold increased risk of major extracranial hemorrhage⁽⁹⁾
- In stroke patients at particularly high risk for venous thromboembolism (VTE; i.e., deep vein thrombosis [DVT] and pulmonary embolism [PE])—such as those with a history of VTE, complete leg paralysis, dehydration, or cancer—risk for VTE may outweigh risk for hemorrhagic transformation. These patients may be given prophylactic anticoagulation.⁽⁷⁾ (For more information, see *Evidence-Based Care Sheet: Deep Vein Thrombosis: Prevention*)

What We Can Do

- › Learn more about the role of oral antithrombotics in the treatment of stroke; share this knowledge with your colleagues
- › Administer antithrombotics, as prescribed, to treat ischemic stroke
- › Educate patients about the medication regimen and potential adverse reactions
- › Request referrals to a neurologist, vocational and rehabilitation counselor, physical or occupational therapist, speech pathologist, skilled nursing care facility, and licensed mental health clinician, if indicated
- › More information can be obtained from the American Stroke Association at <https://www.stroke.org>

Coding Matrix

References are rated using the following codes, listed in order of strength:

M Published meta-analysis	RV Published review of the literature	PP Policies, procedures, protocols
SR Published systematic or integrative literature review	RU Published research utilization report	X Practice exemplars, stories, opinions
RCT Published research (randomized controlled trial)	QI Published quality improvement report	GI General or background information/texts/reports
R Published research (not randomized controlled trial)	L Legislation	U Unpublished research, reviews, poster presentations or other such materials
C Case histories, case studies	PGR Published government report	CP Conference proceedings, abstracts, presentation
G Published guidelines	PFR Published funded report	

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