

Stroke: Review Questions

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QUESTIONS

Choose the single best answer for each question.

- 1. What proportion of patients with ischemic stroke have a preceding transient ischemic attack (TIA)?**
 - (A) Less than 5%
 - (B) 10%–15%
 - (C) 20%–25%
 - (D) 30%–35%
 - (E) 40%–45%
- 2. A 32-year-old patient with stroke is suspected of having a hypercoagulable state. All of the following blood tests are appropriate components of the work-up for this patient EXCEPT:**
 - (A) Antithrombin III
 - (B) Homocysteine
 - (C) Lupus anticoagulant
 - (D) Prolactin
 - (E) Protein C and protein S
- 3. All of the following are contraindications for the use of intravenous recombinant tissue-type plasminogen activator (rTPA) for the treatment of acute ischemic stroke EXCEPT:**
 - (A) Any history of intracranial hemorrhage
 - (B) Blood glucose level less than 50 mg/dL
 - (C) Heparin administration 14 days prior
 - (D) Improvement of neurologic signs
 - (E) Mild neurologic signs (eg, isolated sensory deficit)
- 4. Which one of the following patients with atrial fibrillation can be treated with aspirin alone?**
 - (A) A 60-year-old woman with rheumatic mitral valve disease
 - (B) A 63-year-old man with no evidence of coronary artery disease (CAD)
 - (C) A 65-year-old man with poor left ventricular systolic function
 - (D) A 79-year-old woman with no evidence of CAD
 - (E) An 80-year-old woman with a history of TIA

(turn page for answers)

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EXPLANATIONS OF ANSWERS

1. **(B) 10%–15%.** Ten to fifteen percent of patients with ischemic stroke have preceding TIA.¹
2. **(D) Prothrombin.** Coagulopathies related to deficiencies of protein C, protein S, antithrombin III, or plasminogen; activated protein C resistance; prothrombin gene mutation; presence of anticardiolipin antibodies or lupus anticoagulant; or elevated homocysteine can be evaluated with various coagulation testing strategies in patients with suspected hypercoagulable states.² Evaluation of prothrombin levels can be used to identify a very recent seizure.
3. **(C) Heparin administration 14 days prior.** Contraindications for the use of intravenous rTPA for the treatment of acute ischemic stroke can be divided into 3 groups. Clinical contraindications include the following: any history of intracranial hemorrhage; pretreatment systolic blood pressure greater than 185 mm Hg; diastolic blood pressure greater than 110 mm Hg; rapidly improving neurological signs; mild neurologic signs such as isolated sensory deficit; symptoms suggesting subarachnoid hemorrhage, stroke, or serious head trauma within the preceding 3 months; gastrointestinal or urinary hemorrhage within the preceding 21 days; major surgery within the preceding 14 days; arterial puncture at a noncompressible site within the preceding 7 days; recent myocardial infarction; seizure at the onset of the stroke; currently taking oral anticoagulants; and heparin administration within the previous 48 hours. Radiographic contraindications include evidence of intracranial hemorrhage on the computed tomography of the brain. Laboratory contraindications include prothrombin time greater than 15 seconds (international normalized ratio > 1.7), platelet count less than $100 \times 10^3/\text{mm}^3$, ele-

vated partial thromboplastin time, and blood glucose level less than 50 mg/dL.³

4. **(B) A 63-year-old man with no evidence of CAD.** Patients with atrial fibrillation are divided into 3 risk groups based on their risk factors.⁴ High-risk factors include: poor left ventricular systolic function, age greater than 75 years, rheumatic mitral valve disease, prosthetic heart valve, prior stroke/TIA or systemic embolism, or hypertension. Patients with high-risk factors require warfarin treatment (if there is a contraindication or refusal to use warfarin, aspirin should be used). Low-risk group characteristics include age less than 65 years and absence of evidence of CAD (clinical or echocardiographic); these patients can be safely treated with aspirin. Moderate-risk factors include diabetes mellitus, CAD with preserved left ventricular systolic function, and age 65 to 75 years. Moderate-risk patients can be treated with warfarin or aspirin if only 1 of the indicated risk factors is present. Patients with more than 1 risk factor should be considered high risk and be treated with warfarin.

REFERENCES

1. Johnston SC, Gress DR, Browner WS, Sidney S. Short-term prognosis after emergency department diagnosis of TIA. *JAMA* 2000;284:2901–6.
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4. Albers GW, Dalen JE, Laupacis A, et al. Antithrombotic therapy in atrial fibrillation. *Chest* 2001;119(1 Suppl): 194S–206S.

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