Assessment Points

System	Effect	Assessment by Hx	PE	Test
HEENT			Decreased JVD	
CV	Decreased HR, Increased CO Arrhythmia from toxicity	Decreased SOB, orthopnea Palpitations	Decreased HR rate, size Irregular pulse	CXR: Decreased heart size ECG: Any arrhythmia except AFIB
RESP	Decreased congestion	Decreased SOB, orthopnea	Decreased rales	CXR: Decreased pulm edema
GI	Anorexia from toxicity			Serum digoxin >2 ng/mL
CNS	Headache, confusion from toxicity			Serum digoxin >2 ng/mL
MS	Fatigue from toxicity -and confusion (brain often more affected than heart) can be cause of reversible cognitive dysfunction			Serum digoxin >2 ng/mL

Key References: Ouyang AJ, Lv YN, Zhong HL, et al.: Meta-analysis of digoxin use and risk of mortality in patients with atrial fibrillation, *Am J Cardiol* 115(7):901–906, 2015; Mittal MK, Chockalingam P, Chockalingam A: Contemporary indications and therapeutic implications for digoxin use, *Am J Ther* 18(4):280–287, 2011.

Perioperative Implications

Preoperative Concerns

- Do not discontinue digitalis preop. Withdrawal in heart failure pts may lead to recurrence of failure symptoms.
- When changing from oral to IV therapy, dosage should be reduced by 20–25%.
- Correct and maintain serum K^+, magnesium.
- Decreasing dose with increasing serum creatinine.
- Maintain a high index of suspicion for digoxin toxicity.

Dipyridamole

Sushila Murthy

Uses

- Rx as adjunctive therapy for prophylaxis of thromboembolism with cardiac valve replacement.
- Used for secondary stroke prevention (often combined with aspirin).
- Used in stress tests to evaluate for presence of coronary artery disease.

Perioperative Risks

- Headache
- Plt dysfunction
- Hemorrhage
- Exacerbation of angina pectoris

Worry About

- Potentiation of anticoagulants
- Thrombosis secondary to dipyridamole discontinuation

Overview/Pharmacology

- Reversibly impairs plt function by inhibiting the activity of adenosine deaminase and phosphodiesterase, which causes an accumulation of adenosine, adenine nucleotides, and cyclic AMP.
- May also cause vasodilation.
- Affects hepatic metabolism and fecal elimination.
- Elimination half-life is 10 h.

Drug Class/Mechanism of Action/Usual Dose

- Antiplatelet agent.
- Chronically taken for secondary stroke prevention or prophylaxis of thromboembolism with cardiac valve replacement.
- Used acutely in IV formulation for diagnosis of CAD.
- Usual doses:
  - Dipyridamole 75–100 mg PO q6h
  - Dipyridamole extended release 200 mg/aspirin 25 mg: 1 capsule q12h
  - Evaluation of coronary artery disease: 0.14 mg/kg/min IV for 4 min; max dose: 60 mg; aminophylline should be available for urgent/emergent reversal; dosing of 50–100 mg (range: 50–250 mg) IV push over 30–60 sec
- Alternatives: Aspirin, NSAIDs, thienopyridines (clopidogrel, prasugrel), and GPIIb/IIIa receptor antagonists.

Assessment Points

System	Effect	Assessment by Hx	PE	Test
NEURO	Vasodilation of cerebral vessels	Headache		
CV	Vasodilation of coronary arteries (theoretical increased risk of ischemia)	Chest pain	Hypotension	ECG, stress test, or cath to assess for myocardial ischemia/infarction
HEME	Plt dysfunction	Bleeding, bruising	Hematoma, petechiae	Bleeding time
HEPAT	Serum enzyme elevations and possible hepatic dysfunction		Jaundice	AST, ALT, alk phos
GI	Gastritis, exacerbation of PUD	Abdominal pain, nausea, hematemesis, melena, diarrhea		

Key References: Diener HC, Darius H, Bertrand-Hardy JM, et al.: Cardiac safety in the European Stroke Prevention Study 2 (ESPS2), *Int J Clin Pract* 55(3):162–163, 2001; Breivik H, Bang U, Jalonen J, et al.: Nordic guidelines for neuraxial blocks in disturbed haemostasis from the Scandinavian Society of Anaesthesiology and Intensive Care Medicine, *Acta Anaesthesiol Scand* 54(1):16–41, 2010.

Perioperative Implications/Possible Drug Interactions

Perioperative Concerns

- Lack of data on the safety of dipyridamole if continued in the periop period. Must balance the risk of bleeding and risk of ischemic events. If discontinued, dipyridamole should be stopped at least 2 d before surgery. Combination aspirin and dipyridamole should be discontinued 7–10 d before surgery.

Adjuvants/Regional Anesthesia/Reversal

- Lack of data regarding regional anesthesia and dipyridamole. Current guidelines suggest that when used alone, there is no need to discontinue before neuraxial blockade.

Anticipated Problems/Concerns

- May diminish the therapeutic effect of acetylcholinesterase inhibitors.
- May enhance the effect of adenosine.
- Extended-release dipyridamole use for stroke prevention is not empirically associated with an increased risk of myocardial ischemia or infarction.