MAYO CLINIC LABORATORIES

Test Definition: FLEC

Flecainide, Serum

Overview

Useful For

Optimizing flecainide dosage

Assessing flecainide toxicity

Monitoring compliance

Method Name

Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)

NY State Available

Yes

Specimen

Specimen Type

Serum Red

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Red top (serum gel/SST are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 1.5 mL
Collection Instructions:
1. Draw blood immediately before next scheduled dose.
2. Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Therapeutics Test Request (T831)
-Cardiovascular Test Request (T724)

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK

Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	28 days	
	Ambient	28 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Flecainide (Tambocor) is a Class I cardiac antiarrhythmic agent indicated for treatment of paroxysmal supraventricular dysrhythmia, paroxysmal atrial fibrillation/flutter, and life-threatening ventricular dysrhythmias. After oral administration, flecainide is almost completely absorbed and peak concentrations are attained in approximately 3 hours. The half-life averages approximately 20 hours but is widely variable (12 to 27 hours), and steady-state concentrations are typically achieved in approximately 5 days. Flecainide is eliminated from blood by hepatic metabolism, as well as renal clearance; significant changes in either organ system will cause impaired clearance. Common adverse effects include dizziness, visual disturbances, and dyspnea. Mild-to-moderate toxicity is associated with dizziness, visual disturbances, headache, nausea, fatigue, palpitations, and chest pain. Visual hallucinations and dysarthria may occur at toxic serum concentrations. Death can occur from hypotension, respiratory failure, and asystole.

Reference Values

Trough Value
0.2-1.0 mcg/mL: Therapeutic concentration
>1.0 mcg/mL: Toxic concentration

Interpretation

Flecainide is most effective in premature ventricular contractions suppression at serum concentrations in the range of 0.2 to 1.0 mcg/mL.

Serum concentrations above 1.0 mcg/mL are associated with a high rate of cardiac adverse experiences such as conduction defects or bradycardia.

Cautions

Specimens that are obtained from gel tubes or anticoagulate collections can cause assay interference.

Clinical Reference

1. Milone MC, Shaw LM. Therapeutic drugs and their management. In: Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:420-453
2. Josephson ME, Buxton AE, Marchlinski FE. The tachyarrhythmias: tachycardias. In: Wilson JD, Braunwald E, Isselbacher KJ, et al, eds. Harrison's Principles of Internal Medicine. 12th ed. McGraw-Hill Book Company; 1991:915
3. Valdes R Jr, Jortani SA, Gheorghiade M. Standards of laboratory practice: cardiac drug monitoring. National Academy of Clinical Biochemistry. Clin Chem. 1998;44(5):1096-1099

4. Joseph SP, Holt DW. Electrophysiological properties of mexiletine assessed with respect to plasma concentrations. Eur J Cardiol. 1980;11(2):115-121
5. Antman EM, Beamer AD, Cantillon C, et al. Long-term oral propafenone therapy for suppression of refractory symptomatic atrial fibrillation and atrial flutter. J Am Coll Cardiol 1988;12(4):1005-1011
6. Goldschlager N, Epstein AE, Naccarelli GV, et al. A practical guide for clinicians who treat patients with amiodarone. Heart Rhythm. 2007;4(9):1250-1259
7. Klotz U. Antiarrhythmics: elimination and dosage considerations in hepatic impairment. Clin Pharmacokinet..2007;46(12):985-996
8. Campbell TJ, Williams KM. Therapeutic drug monitoring: antiarrhythmic drugs. Br J Clin Pharmacol 2001;52 Suppl 1(Suppl 1):21S-34S. doi:10.1046/j.1365-2125.2001.0520s1021.x

Performance

Method Description
Protein is precipitated from serum using an organic solvent based internal standard. Following centrifugation, the supernatant is diluted with clinical laboratory reagent water and analyzed by liquid chromatography tandem mass spectrometry.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
2 to 5 days

Specimen Retention Time
14 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Superior Drive

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA

requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

80181

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
FLEC	Flecainide, S	3638-4

Result ID	Test Result Name	Result LOINC® Value
9243	Flecainide, S	3638-4