MAYO CLINIC LABORATORIES

Test Definition: QUIN

Quinidine, S

Overview

Useful For

Assessing and adjusting quinidine dosage for optimal therapeutic level

Assessing quinidine toxicity

Method Name

Kinetic Interaction of Microparticles in Solution (KIMS)

NY State Available

Yes

Specimen

Specimen Type

Serum Red

Specimen Required

Collection Container/Tube: Red top

Submission Container/Tube: Plastic vial

Specimen Volume: 0.5 mL

Collection Instructions: Centrifuge and aliquot serum into a plastic vial within 2 hours of collection.

Forms

If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

Reject Due To

Gross hemolysis	Reject

Specimen Minimum Volume

0.25 mL

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	14 days	
	Frozen	28 days	
	Ambient	14 days	

Clinical & Interpretive

Clinical Information

Quinidine is indicated for atrial fibrillation and flutter, and life-threatening ventricular arrhythmia. Optimal serum concentrations are in the range of 2.0 to 5.0 mcg/mL, with toxicity apparent at levels of 6.0 mcg/mL or higher. Symptoms of toxicity (cinchonism) include tinnitus, light-headedness, premature ventricular contractions, and atrioventricular block. Gastrointestinal distress is a frequent side effect that becomes more severe and is associated with nausea and vomiting at higher drug concentrations.

The half-life of quinidine is 6 to 8 hours. Physiologic processes that generally reduce hepatic metabolism and renal clearance increase serum quinidine levels, while comedication with cytochrome p450 (CYP)-enzyme inducers enhances clearance and results in lower blood concentrations.

Reference Values

Therapeutic: 2.0-5.0 mcg/mL

Critical value: > or =6.0 mcg/mL

Interpretation

Optimal response to quinidine occurs when the serum level is between 2.0 to 5.0 mcg/mL.

Cautions

No significant cautionary statements

Clinical Reference

1. Milone MC, Shaw LM: Therapeutic drugs and their management. In: Rifai N, Horvath AR, Wittwer CT, eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, Elsevier; 2018: 800-831

2. Brunton LL, Hilal-Dandan R, Knollmann BC, eds. Goodman and Gilman's: The Pharmacological Basis of Therapeutics. McGraw-Hill; 2018

Performance

Method Description

Kinetic interaction of microparticles in solution (KIMS) as measured by changes in light transmission. The assay is a homogeneous immunoassay based on the principle of measuring changes in scattered light or absorbance which result when activated microparticles aggregate. The microparticles are coated with quinidine and rapidly aggregate in the presence of a quinidine antibody solution. When a sample containing quinidine is introduced, the aggregation reaction is partially inhibited, slowing the rate of the aggregation process. Antibody bound to sample drug is no longer available to promote microparticle aggregation, and subsequent particle lattice formation is inhibited. Thus, a classic inhibition curve with respect to quinidine concentration is obtained, with the maximum rate of aggregation at the lowest quinidine concentration. By monitoring the change in scattered light or absorbance, a concentration-dependent curve is obtained.(Package insert: Roche Quinidine reagent. Roche Diagnostics; 08/2015)

PDF Report

No

Specimen Retention Time

2 weeks

Performing Laboratory Location

Rochester

Fees & Codes

Test Classification

This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

80194

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
QUIN	Quinidine, S	6694-4

Result ID	Reporting Name	LOINC®

8302	Quinidine, S	6694-4