

Amiodarone	
Description	Type III anti-arrhythmic drug
Indication	Therapeutic drug monitoring is not required in the majority of patients. In some patients, monitoring plasma amiodarone concentration may differentiate failure of drug therapy from suboptimal dosing or poor adherence, while in others it may reduce concentration-related side-effects.
Additional Info	<p>Amiodarone is a diiodinated benzofuran compound, structurally related to thyroxine. It primarily prolongs cardiac action potential duration, but also possesses vasodilatory and non-competitive anti-adrenergic activity.</p> <p>Amiodarone is very lipid soluble and so has a large volume of distribution (70 L/kg.) It undergoes extensive first pass hepatic metabolism in the liver by de-ethylation to the primary active metabolite, mono-N-desethylamiodarone. Peak blood levels are achieved 3 to 7 hours after ingestion. The drug is highly protein bound (98%) to albumin and beta-lipoprotein. The elimination half-life is 50 days.</p> <p>Toxicity of amiodarone is related to dosage and duration of treatment. The most serious adverse effect is pulmonary toxicity, manifesting as cough, progressive difficulty in breathing and adult respiratory distress syndrome. Thyroid abnormalities occur in approximately 10% of patients. Rarer effects include cardiotoxicity (< 3%), hepatotoxicity (<1 %) and neurotoxicity (<1 %). Photosensitivity can also cause the visible extremities to turn blue.</p>
Concurrent Tests	Liver and thyroid function should be monitored every 6 months in patients taking amiodarone.
Dietary Requirements	N/A
Interpretation	<p>Little anti-arrhythmic action at < 0.5 mg/L</p> <p>Adverse reactions common at > 2.5 mg/L (Pulmonary side effects may occur at lower levels)</p> <p>Parent drug and metabolite usually present at similar concentrations. Greatly increased concentration of parent relative to metabolite suggests poor adherence.</p>
Collection Conditions	Pre-dose sample recommended
Frequency of testing	Repeated measurement only indicated in complex cases