



Long-term use of Amiodarone in cardiac patients

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Abstract

Amiodarone is widely prescribed, largely due to its efficacy in the management of both supra ventricular and ventricular arrhythmia's. Despite these advantages, the use of amiodarone is associated with a relatively high incidence of side effects, making it a complicated drug to use safely. Retrospective audit of all patients commenced on amiodarone between Jan 2020 to Dec 2022 who were treated for at least two years. In this study, twenty-seven patients fulfilled entry criteria. 0% patients have taken PFTs, 19% patients taken Chest X ray, 44% patients taken ECG, 11% patients taken LFT and 7% patients taken TFT. Our study observes that the dosage and duration of Amiodarone are the most important factors influencing the risk for developing side effects. At our hospital, baseline PFTs and follow up tests - TFTs, LFTs and CXR are not performed as per recommended guidelines. This may be an issue also for other institutions.

Keywords: Pulmonary function tests (PFTs); Chest x-ray (CXR); Electrocardiogram (ECG); Liver function tests (LFTs); Thyroid function tests (TFTs)

1. Background

Amiodarone is an iodinated benzo furan derivative that was synthesized and tested as an antianginal agent in the 1960s but was later discovered to have anti arrhythmic properties. Amiodarone is widely prescribed, largely due to its efficacy in the management of both supra ventricular and ventricular arrhythmia's. In addition to the superior efficacy compared with most other anti-arrhythmic drugs, amiodarone has very little negative inotropic activity and a low rate of ventricular pro arrhythmia, making it advantageous for use in patients with heart failure. Long-term use of oral amiodarone has been associated with a relatively high incidence of adverse effects that can range in severity from mild to potentially lethal. Although Amiodarone is an effective drug, it carries high toxicity profile. Its use is being complicated by safety issues, which are emphasized by several clinical reports associated with pulmonary, thyroid, ocular, and/or liver toxicity to drug therapy. It is also known to interact with a large variety of therapeutic agents (drug-drug interactions), resulting from inhibition of cytochrome P450-mediated metabolism, which raises systemic exposure of the targeted drug.

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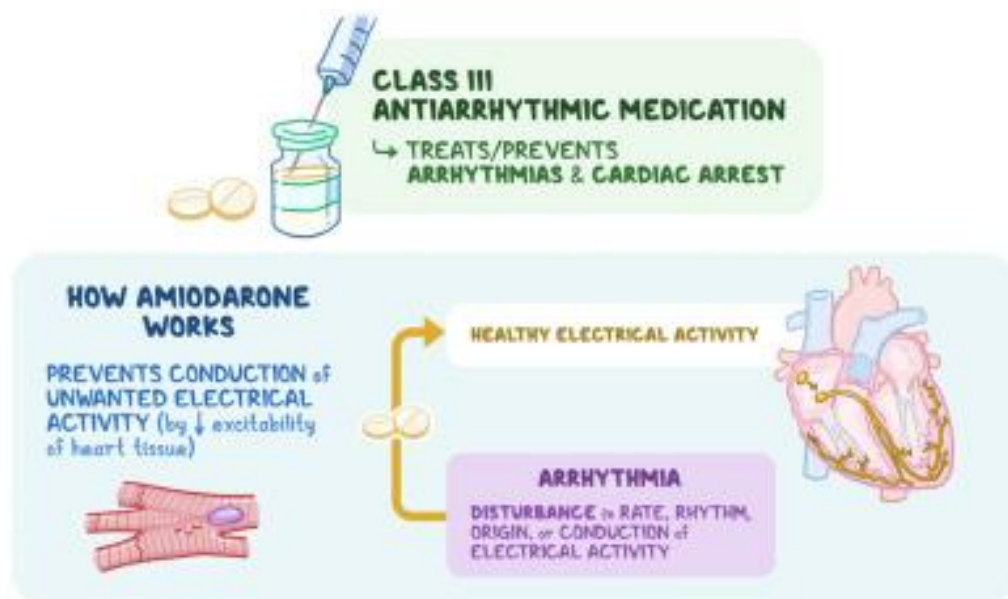


Fig. 1. Mechanism action of Amiodarone.

To objective aim of this study to determine the side effects of amiodarone when it is taken for long-term such as more than six months. Before a patient is commenced on amiodarone therapy, prescribers should ensure that the following baseline assessments are completed - Pulmonary function assessment (including chest X-ray), ECG, serum potassium levels and Liver function tests. Their physician who needs to monitor carefully for adverse effects of amiodarone therapy particularly pulmonary, liver, thyroid and rarely renal toxicity by estimating renal function, electrolytes, TFT and LFT, should review patients six months.

2. Methods

This is the Retrospective audit of all patients commenced on amiodarone between Jan 2020 to Dec 2022 who were treated for at least for two years.

3. Results

In this study, Twenty-seven patients fulfilled entry criteria. 0% patients had taken PFTs, 19% patients had taken Chest X ray, 44% patients had taken ECG, 11% patients had taken LFT and 7% patients had taken TFT estimations.

Table 1. Recommended at baseline tests

Recommended at baseline	Number of patients (%)
Pulmonary function tests (PFTs)	0 (0%)
Chest x-ray (CXR)	5 (19%)
Electrocardiogram (ECG)	12 (44%)
Liver function tests (LFTs)	3 (11%)
Thyroid function tests (TFTs)	2 (7%)

4. Discussion

One of the most often prescribed anti-arrhythmic medications is amiodarone. The primary objective of our study was to determine the side effects of amiodarone when it taken for long-term, such as more than 6 months. We reviewed 320 patients treated with

amiodarone in the period between Jan 2020 to Dec 2022. Of 27 patients were eligible for this study because they only used amiodarone for long term i.e., more than six months. Out of those. 18 (67%) were males and 9 (33%) females; and mean age was 63 years for females and 60 for males, and overall 61 years. Both the gender had been taking amiodarone for an average of 2 years.

As for their medical history of diseases, it was found that there were 17 (63%) patients with diabetes mellitus. Similarly, there were 17 (63%) patients with hypertension 10 (37%) with chronic kidney disease and 9 (33%) with coronary artery diseases. All the patients had one or more morbid disease.

Conclusion

Our study observed that the dosage and duration of Amiodarone are the most important factors influencing the risk of developing side effects. Amiodarone is safe and effective drug at lower doses. It can be well tolerated at lower doses. Most of the side effects are mild and do not limit the use of the drug. However, many of the side effects develop only after prolonged periods of therapy. Hence, a careful follow up and monitoring of parameters like serum creatinine, thyroid hormones, and liver enzymes on regular basis is essential. At our hospital, baseline PFTs and follow up tests (TFTs, LFTs and CXR) are not performed as per recommended guidelines. This may be an issue also at other institutions. Improved adherence to guidelines is essential to identify respiratory and other adverse effects promptly. PFTs and ECG are recommended at follow up if clinically indicated.

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