



Short Report

Amiodarone and the lung: wide variations in clinical practice

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Introduction

Amiodarone can cause serious lung toxicity (1). Our experience suggests differences in clinical practice between hospitals and between consultants in the monitoring and management of lung problems due to amiodarone. A recent editorial (2) highlighted the potential pulmonary risks of amiodarone but gave no recommendations on the monitoring of lung function. We set out to assess the practice of the respiratory and cardiology consultants in the Trent region.

Methods

A questionnaire on clinician's usual practice for monitoring the lungs at the start of and during, amiodarone therapy was sent to cardiology and respiratory consultants in the Trent region. Questions were asked about the management of abnormal pulmonary function tests (PFTs) in symptomatic and asymptomatic patients and on the number of adverse pulmonary effects encountered in the preceding 12 months.

Results

Of the 61 consultants mailed [cardiology (C) $n=27$; respiratory (R) $n=34$], 49 replied (C: $n=21$ 77%; R: $n=28$ 82%). The response to requests for PFTs prior to starting treatment and the tests requested and the PFT requests after the initiation of amiodarone are set out in Table 1. One respiratory physician had no policy for testing PFTs and another never used amiodarone. There was a significant difference between cardiologists and respiratory physicians in the request of baseline PFTs ($P<0.01$). Fifteen percent of consultants routinely repeat PFTs on all patients after intervals varying between 3 and 12 months (C: $n=2$, 10%; R: $n=5$, 19%).

In a hypothetical patient with no pulmonary symptoms but a fall of 20% in transfer factor (TLCO), 39% would continue amiodarone (C: $n=7$, 50%; R: $n=8$, 33%) and

61% would stop it, although some noted that it depended on the clinical necessity for the drug.

In the previous year 10 consultants had stopped amiodarone due to presumed pulmonary toxicity (C: $n=4$; R: $n=6$), the most important criteria being the chest radiograph (five cases), clinical signs (four cases) and the PFTs (one case). Forty-one percent of consultants would never discharge a patient taking long-term amiodarone from hospital follow-up (C: $n=8$, 38%; R: $n=11$, 44%) whereas 59% accept general practitioner follow-up.

Discussion

This survey confirms wide variations in the management of patients prescribed amiodarone with regards to lung effects. Two thirds of consultants routinely check baseline PFTs in all or some patients and of these one quarter repeat tests routinely or in those perceived to be at risk of developing lung side-effects (3,4). Some consultants request PFTs only if there are changes in symptoms and some do not request PFTs at all.

Amiodarone lung toxicity is observed in up to 5% of patients on long-term treatment (5). Symptoms may include an insidious increase in shortness of breath, a non-productive cough, fever, weight loss and pleurisy. It may be difficult to distinguish lung toxicity from pulmonary oedema when there is underlying left ventricular impairment. The diagnosis of amiodarone lung is made with two or more of the following; new or worsening symptoms; chest radiograph changes; a fall in TLCO or total lung capacity of 15% or more (6). Pulmonary toxicity appears to be related both to the mean daily and cumulative dose of amiodarone (7) although it can occur with only 200 mg per day (8–10). On withdrawal of amiodarone there is usually resolution but occasionally symptoms are progressive and treatment with steroids remains controversial (11).

This study revealed differences between and within specialities. Prospective studies suggest baseline tests that include TLCO may highlight patients who are at increased risk for developing problems (3,4,12). Respiratory physicians are more likely than cardiologists to test all patients routinely, possibly to acquire a baseline. Cardiologists are more likely to perform baseline PFTs on those with underlying lung disease and therefore perceived increased risk. A quarter of consultants who request baseline tests ask

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TABLE 1. Response to questions on pulmonary function testing for patients prescribed amiodarone

	Respiratory [% (n)]	Cardiology [% (n)]
‘When would you ask for pulmonary function tests before starting amiodarone?’		
Routinely in all patients	41 (11)	14 (3)
Underlying lung disease only	15 (4)	57 (12)
Never	41 (11)	29 (6)
Other	3 (1)	0 (0)
‘Which pulmonary function tests do you request before starting amiodarone?’		
Spirometry alone	19 (3)	7 (1)
Lung volumes & TLCO	69 (11)	87 (13)
Arterial blood gases (in addition)	12 (2)	7 (1)
‘When would you carry out follow-up pulmonary function tests?’		
Routinely	19 (5)	10 (2)
Low baseline TLCO	8 (2)	10 (2)
Change in symptoms	54 (14)	67 (14)
Never	19 (5)	14 (3)

for spirometry alone, which is inadequate for assessing patients at increased risk, or request arterial blood gases, which are invasive and unhelpful.

There was a difference in the action that would be taken in response to an asymptomatic fall of 20% in TLCO. Several studies cite falls of 20% in TLCO which stabilize or improve despite the amiodarone being continued and with none developing overt pulmonary toxicity (12,13). In those who routinely monitor PFTs, action taken on a lone fall in TLCO with no deterioration in symptoms or radiographical change, may lead to the stopping of an effective antiarrhythmic agent. There also appears to be no warning of the onset of toxicity with serial measurement (12) and this suggests that routinely repeating PFTs in asymptomatic patients is unfruitful.

More respiratory consultants had stopped amiodarone due to pulmonary toxicity in the previous 12 months. This may be due to chance, a greater awareness of the respiratory cause for symptoms or that they are more likely to be referred patients who develop shortness of breath. Patients under the care of respiratory consultants may also have a lesser clinical necessity for the drug, for example non-life threatening arrhythmias.

In conclusion, the results confirm wide variations between consultants in the monitoring of pulmonary function in patients prescribed amiodarone. These variations may be important in patient care and have financial and medicolegal implications. There is need for a consensus view on this issue.

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