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Case Report

Anaphylactic shock associated with intravenous amiodarone

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ABSTRACT

A 64-year-old woman was admitted to our emergency department with shortness of breath and palpitation which started 2 h before her admission. She had a history of rheumatic mitral valve disease and was on drug treatment with warfarin and metoprolol. The patient was orthopneic, blood pressure was 108/68 mmHg with an irregular pulse with a heart rate of 158 beats per minute, and respiratory rate was 23 times per minute. Her electrocardiogram was consistent with atrial fibrillation with rapid ventricular response. For pharmacological cardioversion the patient was given amiodarone intravenous loading dose of 300 mg in 30 min. After 10 min of infusion the patient complained of pruritus and skin rash consistent with urticaria. At the same time the patient had dyspnea and bronchoconstriction was noted on both lung fields. The blood pressure was measured as 64/40 mmHg. The patient was taken to intensive care unit and supportive treatment for anaphylactic shock was given. Amiodarone is a class III antiarrhythmic agent frequently used in the management of atrial fibrillation. This potentially fatal complication of amiodarone should be kept in mind by clinicians and before administration patients should be questioned about previous allergic reactions including previous iodine or iodinated contrast media. Alternative agents should be considered in these conditions.

<Learning objective: Anaphylactic shock is a rare complication of amiodarone and it is a commonly used drug. This potentially fatal complication of amiodarone should be kept in mind by clinicians.>

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Introduction

Amiodarone is a class III antiarrhythmic agent which is used in treatment of supraventricular and ventricular arrhythmias. Amiodarone has serious and potentially life-threatening side effects including pneumonitis, thyroid dysfunction, hepatitis, ophthalmic and neurologic disorders, and skin reactions. Because of these side effects, generally it is not the drug of first choice in the treatment of arrhythmia and long-term usage of this drug is limited due to side effects [1]. Allergic reactions are reported with amiodarone treatment, but anaphylactic shock is a rare complication of this drug [2–5]. We hereby report a case of anaphylactic shock associated with intravenous amiodarone treatment.

Case report

A 64-year-old woman was admitted to our emergency department with shortness of breath and palpitation which started 2 h

before her admission. She had a history of rheumatic mitral valve disease and was on drug treatment with warfarin (5 mg/day) and metoprolol (50 mg/day). She had an episode of paroxysmal atrial fibrillation 6 months previously, which returned to sinus rhythm spontaneously and she was anticoagulated with warfarin. On physical examination, the patient was orthopneic, blood pressure was 108/68 mmHg with an irregular pulse with a heart rate of 158 beats per minute, and respiratory rate was 23 times per minute. Cardiac examination revealed diastolic murmur along the left sternal border. Auscultation of lung fields revealed basal crepitations. Her electrocardiogram was consistent with atrial fibrillation with rapid ventricular response (Fig. 1). We performed transthoracic echocardiography at the bedside which revealed that the patient had rheumatic mitral and aortic valves. She had moderate mitral stenosis (mitral valve area measured with planimetry was 1.39 cm²) and mild mitral and aortic regurgitation. In laboratory tests, complete blood count, electrolytes, renal, and liver tests were normal and the international normalized ratio was 2.6 in the therapeutic range. For pharmacological cardioversion the patient was given amiodarone (Cordarone 150 mg i.v., Sanofi-Aventis, Paris, France) intravenous loading dose of 300 mg in 30 min (administered with 5% dextrose solution). After 10 min of infusion, the patient complained of pruritus and skin rash consistent with urticaria. Perioral erythema and edema were observed. At the same time, the patient had dyspnea and bronchoconstriction was noted on both lung fields.

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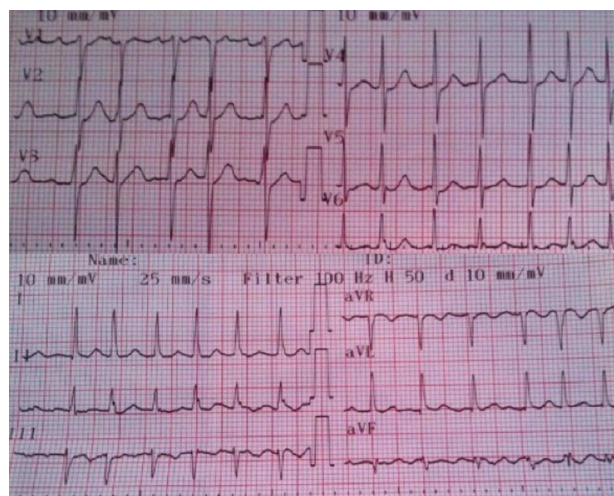


Fig. 1. Admission electrocardiogram consistent with atrial fibrillation with high ventricular response.

Oxygen saturation level was 90% and no signs of hypoxia were observed. Nasal oxygen was administered. The blood pressure was measured as 64/40 mmHg. The patient was taken to the intensive care unit with a diagnosis of anaphylactic shock. The patient was mildly confused and her Glasgow coma score was 13. The infusion was stopped and subcutaneous adrenaline (0.3 mg) was administered and bolus isotonic saline infusion was started. The patient was given inotropic support with dopamine (5 µg/kg/min) and pheniramine (45.5 mg). The patient was well after 2 h and sinus rhythm was achieved spontaneously. Complete blood count revealed elevated eosinophil count 1.2 µL ($0\text{--}0.7 \times 10^3/\mu\text{L}$) and IgE level was elevated 740 IU/mL (7–460 IU/mL). Serum tryptase level was 27 ng/mL (0–15 ng/mL). The patient was discharged the next day with a recommendation for further investigation of allergies and daily treatment with metoprolol (50 mg/day).

Discussion

Amiodarone is a broad-spectrum antiarrhythmic drug with unique side effects [6]. Anaphylactic shock associated with amiodarone is a rare condition [4,5]. It contains an iodine component which may be associated with anaphylactoid reactions [6–8]. Known hypersensitivity to iodine was listed as a contraindication to amiodarone administration, but some reports showed that previous iodine allergy was not an absolute contraindication to this drug [6–8]. Polyoxyethylene-sorbitan-20-monooleate (also known

as polysorbate 80 and Tween 80) is a solubilizing agent ubiquitously used in medical preparations including amiodarone. In the literature some cases have been reported regarding hypersensitivity reactions due to this agent [9,10]. In our case, the patient did not have an allergy history to any agent and this was the first time taking the drug. Anaphylactic shock occurred and the patient recovered with appropriate treatment. Polyoxyethylene-sorbitan-20-monooleate or iodine hypersensitivity may be responsible for anaphylactic shock in this case. It is important to realize quickly this rare side effect of this drug and immediate treatment with removal of the drug is crucial. Assessments of vital signs of patients have to be done as soon as possible and advanced life support including assisted ventilation, inotropic support, cardiopulmonary resuscitation, antihistaminic, drugs and subcutaneous adrenaline are essential components of treatment.

This potentially fatal complication of amiodarone should be kept in mind by clinicians and before administration patients should be questioned about previous allergic reactions including previous iodine or iodinated contrast media and other drug reactions. Alternative agents should be considered in these conditions or the infusion of the drug may be administered in the intensive care unit with appropriate drugs and staff.

Conflict of interest

Authors declare no conflict of interest.

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