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Intermittent QT prolongation induced by short-term oral amiodarone therapy

Intermitujące wydłużenie odstępu QT wywołane krótkotrwałym doustnym leczeniem amiodaronem

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Abstract

Although amiodarone appears to have few pro-arrhythmic effects, torsade de pointes (TdP) has been observed after administration of a low dose and short term use of oral amiodarone, in the absence of predisposing factors. We describe the case of a 41-year-old woman admitted to hospital because of a cardiac arrest from TdP. On hospital admission, ECG showed sinus bradycardia 46 bpm with marked QT prolongation.

Key words: long QT, amiodarone, ICD therapy

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A 41-year-old woman without previously documented QT prolongation or ventricular tachyarrhythmias was admitted after resuscitation from cardiac arrest at home. She was defibrillated by an emergency team because of polymorphic ventricular tachycardia (VT). An initial ECG revealed sinus rhythm at a rate of 46 bpm and a prolonged QT interval (QT: 800 ms) (Fig. 1). Additional patient history obtained from her family revealed that five days earlie, she had been started on amiodarone (200 mg/day) without a loading dose for paroxysmal atrial fibrillation. The patient was treated with temporary transvenous right ventricular overdrive pacing (80/min), intravenous infusion of potassium and magnesium, and amiodarone was stopped. After cessation of the oral amiodarone, the patient's QT interval returned to normal. During her hospital stay, intermittent QT prolongation did recur 16 days after admission (Fig. 2), and the patient was defibrillated five times because of VT/ventricular fibrillation. A dual-chamber implantable cardioverter-defibrillator was implanted after multiple episodes of arrhythmia as a secondary prevention of sudden death.

Amiodarone-induced QT prolongation frequently occurs in patients with subclinical mutations in one of the genes responsible for the congenital long QT syndrome. These patients, who have silent mutations in the function of their ion channels, are susceptible to developing torsade de pointes

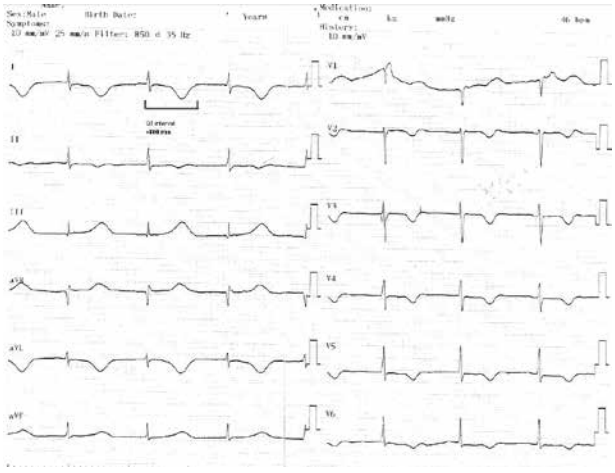

Figure 1. QT interval = 800 ms, recorded five days after initiating treatment with amiodarone

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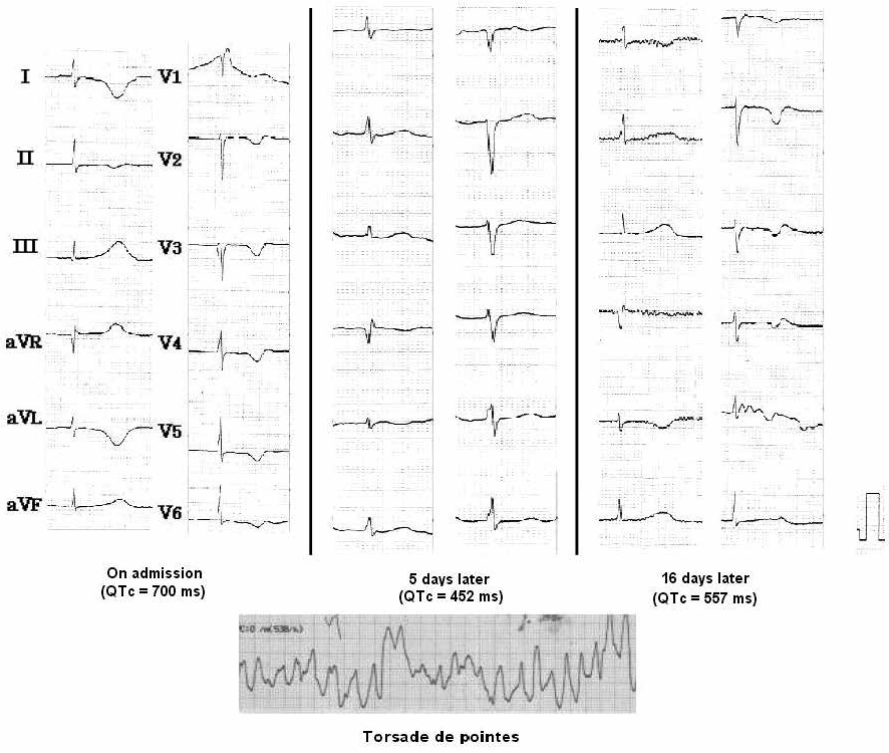

Figure 2. Serial electrocardiogram of patient showing intermittent QT interval prolongation (upper panels). Immediately after admission to the emergency room, torsade de pointes occurred (lower panel) (calibration setting 10 mm = 1.0 mV)

if given a drug that blocks potassium channels. This case of polymorphic VT occurring early in oral amiodarone therapy at a low dose (200 mg/day), and in the absence of other predisposing factors, underlines the importance of careful patient monitoring during amiodarone therapy, even with short-term use.

Conflict of interest: *none declared*