Cardiac arrest in an older male patient treated with flecainide for atrial fibrillation

1Tiziana Ciarambino, 2Rosario Bottone, 2Gennaro Sansone, 2Mauro Giordano

1Hospital of Marcianise, ASL Caserta, Italy

2University of Campania, L. Vanvitelli, Naples, Italy

**Corresponding Authors:**

Tiziana Ciarambino

MD, PhD

Hospital of Marcianise, ASL Caserta, Italy

mail: tiziana.ciarambino@gmail.com

**Abstract**

Flecainide is a class I antiarrhythmic used for supraventricular tachyarrhythmias with mild adverse reactions. We present a case report in a 78-year-old male that came to the emergency department with atrial fibrillation and was subsequently treated with flecainide. During the infusion the patient went into cardiac arrest. Cardiopulmonary resuscitation was performed until return of spontaneous circulation was achieved after 1min and 40 seconds. Conclusion. Some trials, like the The Cardiac Arrhythmia Suppression Trial (CAST), consider flecainide to be safe, but our case report, together with several other published reports brings attention to the use of flecainide in pharmacologic cardioversion of atrial fibrillation as a cause of cardiac arrest.

Keywords: older man, atrial fibrillation, emergency department, cardiac arrest, flecainide

**Introduction**

Atrial ﬁbrillation (AF) accounts for more than one-third of all hospitalizations for arrhythmia. Flecainide is a class I antiarrhythmic drug used for supraventricular tachyarrhythmias. Current European guidelines recommend the use of flecainide in selected groups of patients with AF who do not have structural heart disease. Potential cardiac adverse effects of flecainide include pro-arrhythmia, conduction abnormalities and negative inotropic effects. Dizziness is the most frequent non-cardiac side effect, followed by blurred vision and difficulty focusing; these are almost all mild, transient and tolerable (1-3). In addition to their limited efﬁcacy, anti- arrhythmic drugs are sometimes poorly tolerated and some of the side effects are serious. The CAST trial considered the drug flecainide safe, but one studied reported that potentially lethal ventricular tachycardia developed in 11 percent of encainide-treated patients and 16 percent of flecainide-treated patients (4).

**Case report**

We present a case report in a 78-year-old male that came to the emergency department complaining of palpitations. His medical history described a previous event of AF without other pathologies or the use of prescribed medications or illicit drugs. At the examination there were no signs or symptoms other than the arrhythmic peripheral pulse. The laboratory tests (such as renal and liver function, glycemia, etc) were normal. The electrocardiogram showed AF at 140 HR. Echocardiography ruled out any cardiopathy. Treatment with flecainide was started with a bolus (150 mg/15 mL) followed by a continuous infusion with 300 mg of flecainide in G5% 250 mL. During the infusion extreme bradycardia developed followed by cardiac arrest. Cardiopulmonary resuscitation, according to AHA guidelines, was performed until return of spontaneous circulation was achieved after 1 min and 40 seconds.

**Conclusion**

This case report describes cardiac arrest in an older patient treated with flecainide for AF. Several trials, including the CAST trial, considered flecainide to be safe. However, several reports (5-6) are in line with our observations, and there may be increased risk of proarrhythmic events in this real-world study of flecainide used for the treatment of AF. In particular, flecainide can induce QT prolongation leading to torsades de pointes and consequently cardiac arrest (7). The findings suggest that further investigation into the safety of flecainide for the treatment of older patients with AF is warranted. Trials may be needed to better describe the safety of this drug in the setting of atrial fibrillation especially in patients at older ages.

**Conflict of Interest**

The authors declare no conflict of interest.

**References**

1. [[A John Camm](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)](https://pubmed.ncbi.nlm.nih.gov/?term=Camm+AJ&cauthor_id=20876603)[,](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)[[Paulus Kirchhof](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)](https://pubmed.ncbi.nlm.nih.gov/?term=Kirchhof+P&cauthor_id=20876603)[,](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)[[Gregory Y H Lip](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)](https://pubmed.ncbi.nlm.nih.gov/?term=Lip+GY&cauthor_id=20876603)[, et al.](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)[[ESC Committee for Practice Guidelines](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)](https://pubmed.ncbi.nlm.nih.gov/?term=ESC+Committee+for+Practice+Guidelines%5BCorporate+Author%5D)[. Guidelines for the management of atrial fibrillation: the Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC). Europace. 2010 Oct;12(10):1360-420.doi: 10.1093/europace/euq350.](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880)
2. [Falk RH](https://www.ncbi.nlm.nih.gov/pubmed/?term=Falk%20RH%5BAuthor%5D&cauthor=true&cauthor_uid=2500880).. Flecainide-induced ventricular tachycardia and fibrillation in patients treated for atrial fibrillation. [Ann Int med 1](https://www.ncbi.nlm.nih.gov/pubmed/?term=1989+jul+15%2C+111%2C+(2)%3A+107+11)989; 15:107-11.
3. [Pritchett EL](https://www.ncbi.nlm.nih.gov/pubmed/?term=Pritchett%20EL%5BAuthor%5D&cauthor=true&cauthor_uid=1902055), [Wilkinson WE](https://www.ncbi.nlm.nih.gov/pubmed/?term=Wilkinson%20WE%5BAuthor%5D&cauthor=true&cauthor_uid=1902055). Mortality in patients treated with flecainide and encainide for supraventricular arrhythmias. [Am J cardiol 1](https://www.ncbi.nlm.nih.gov/pubmed/1902055)991;11:976-80.
4. Echt DS, Liebson PR, Mitchell LB, et al. [Mortality and morbidity in patients receiving encainide, flecainide, or placebo. The Cardiac Arrhythmia Suppression Trial.](https://pubmed.ncbi.nlm.nih.gov/1900101/) N Engl J Med. 1991 Mar 21;324(12):781-8.
5. [Dokter M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Dokter%20M%5BAuthor%5D&cauthor=true&cauthor_uid=29594407), [Talarico G](https://www.ncbi.nlm.nih.gov/pubmed/?term=Talarico%20G%5BAuthor%5D&cauthor=true&cauthor_uid=29594407), [Armbrust S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Armbrust%20S%5BAuthor%5D&cauthor=true&cauthor_uid=29594407), et al. Fatal flecainide intoxication in a 17-year-old girl. [Anaestesist](https://www.ncbi.nlm.nih.gov/pubmed/29594407) 2018; 5:359-61.
6. [Benoit A](https://www.ncbi.nlm.nih.gov/pubmed/?term=Benoit%20A%5BAuthor%5D&cauthor=true&cauthor_uid=26638444), [Paolucci M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Paolucci%20M%5BAuthor%5D&cauthor=true&cauthor_uid=26638444), [Stefan L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Stefan%20L%5BAuthor%5D&cauthor=true&cauthor_uid=26638444), et al. A case of flecainide intoxications. [Rev med Liege](https://www.ncbi.nlm.nih.gov/pubmed/26638444) 2015;9:442-5.
7. [Kevin N Oguayo](https://pubmed.ncbi.nlm.nih.gov/?term=Oguayo+KN&cauthor_id=24510469), [Ola O Oyetayo](https://pubmed.ncbi.nlm.nih.gov/?term=Oyetayo+OO&cauthor_id=24510469), [Steven M Costa](https://pubmed.ncbi.nlm.nih.gov/?term=Costa+SM&cauthor_id=24510469), [et](https://pubmed.ncbi.nlm.nih.gov/?term=Mixon+TA&cauthor_id=24510469) al. An unusual case of flecainide-induced QT prolongation leading to cardiac arrest. Pharmacotherapy. 2014 May;34(5):e30-3.doi: 10.1002/phar.1403. Epub 2014 Feb 7.