A rare case of flecainide poisoning complicated by cardiogenic shock

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Clinical history

- Woman, 38 years old
- Congenital hydrocephalus with slight reduction of mental abilities
- WPW syndrome due to a parahisian AP, refractory to propafenone, amiodarone and flecainide
- Successful cryoablation of the AP on Sep. 2014
- Pharmacological therapy discontinued after ablation
EKG before cryoablation
Baseline EKG (after cryoablation)
Admission to ER (April 2015)

- Patient **obnubilated**, no informations about drug assumption available
- **Hypotension** (SBP 60 mmHg)
- Routine laboratory tests unremarkable, including cTnI

Severe biventricular disfunction (**LVEF 35%**)
- Total CT scan excluded cerebral events or pulmonary embolism
- And...
EKG on admission:

QRS >200 msec
Support therapy started

- Fluid replacement and low doses of inotropics (norepinephrine and dobutamine) with haemodynamic improvement
- Administration of activated charcoal
- Patient intubated and admitted to ICU
After 12 hours...

QRS 240 msec
After 12 hours...

- No improvement in LVEF

- Good response to inotropic therapy (PAS >100 mmHg) with rapid wash-out of arterial lactate, no signs of liver or renal failure

- Routine toxicological screening negative (opioids, BDZ and TCAs)
Previous treatment with antiarrhythmic drugs
Cognitive impairment
QRS widening
Cardiac dysfunction

FLECAINIDE?
Over the next 36 hours...

EKG returned near to baseline

QRS 120 msec
Over the next 36 hours...

- Flecainide serum levels were **2000 ng/ml** at 12 hours and 1000 ng/ml at 26 hours from admission (NR 200-1000 ng/ml)
- LVEF improved to **50%**
- Inotropic drugs and ventilatory support were discontinued
- After recovery, patient confessed inappropriate flecainide assumption and was referred for **psychiatric** consult.
Flecainide: pharmacokinetics

- High oral bioavailability (85%)
- Large volume of distribution (5-13 L/kg)
- Peak serum concentrations up to 6 hours after ingestion
- No specific antidotes, haemodialysis uneffective

Acute intoxication is a life threatening event
(reporting mortality rate 22%)
Literature review

Arrhythmogenic effect of flecainide toxicity
Pierre-Yves Courand¹, Franck Sibellas¹, Sylvain Ranc¹, Audrey Mullier², Gilbert Kirkorian¹, Eric Bonnefoy¹

Case Report
Electrocardiographic changes in a rare case of flecainide poisoning: a case report
Andrea Rognoni*¹, Marzia Bertolazzi¹, Marzia Peron², Sergio Macciò¹, Gemma Ternavasio Cameroni², Angelo Gratarola² and Giorgio Rognoni¹

A Life-Threatening Flecainide Overdose Treated with Intravenous Fat Emulsion
HEATHER ELLSWORTH, M.D.,*⁺ SAMUEL J. STELPFLUG, M.D.,*⁺ JON B. COLE, M.D.,*⁺ JOSEPH A. DOLAN, M.D.,⁺ and CARSON R. HARRIS, M.D.⁺⁺

Case Report
Irreversible third-degree heart block and pacemaker implant in a case of flecainide toxicity
Take home message

Patient presenting cardiogenic shock & QRS widening

- Consider intoxication by 1c agents
- Refer to closest poison centre for drug dosing
Flecainide poisoning

Negative inotropic effect

Management of haemodynamic impairment
Flecainide poisoning

Arrhythmogenic effect

Consider hypertonic sodium bicarbonate infusion
Thank you for your attention!