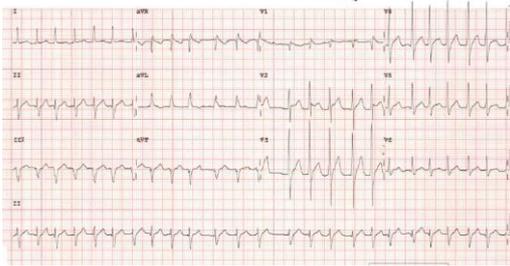


Clinical update no. 515

13 June 2018



39yr-M in AF. What drugs would you avoid?



<https://www.brugadadrugs.org/> The Brugada syndrome is an important cause of sudden cardiac death at a relatively young age, however most patients are asymptomatic and will not experience malignant arrhythmias. The type-1 Brugada ECG pattern is associated with an increased risk for ventricular tachyarrhythmia, cardiac arrest and sudden death. Many drugs can induce the type-1 ECG pattern and sometimes fatal arrhythmias. Other patients with sodium channel mutation but without a Brugada ECG pattern might also be at risk when these drugs are used.

Drugs to be avoided

Include flecainide, psychotropic drugs (including TCAs, lithium), anaesthetic/ analgesic (including propofol, bupivacaine), alcohol, cannabis, cocaine.

Drugs preferentially avoided

Amiodarone, lignocaine, propranolol, verapamil, carbamazepine, fluoxetine, lamotrigine, phenytoin, ketamine, tramadol, metoclopramide.

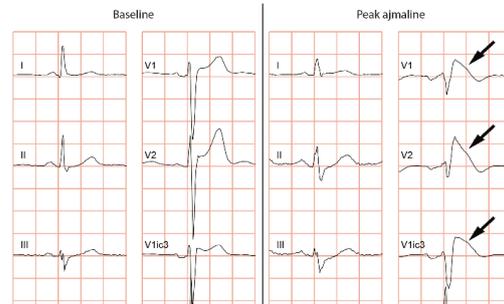
Potential anti-arrhythmic drugs

Isoprenaline, quinidine.

Diagnostic drugs

Ajmaline has the best sensitivity for diagnostic testing; flecainide and procainamide less so. They induce the characteristic ECG changes,

as shown below. However trials have shown that programmed electrical stimulation is not helpful in risk stratification. Atrial fibrillation puts a patient at increased risk. A family history of sudden death does not increase risk for relatives.

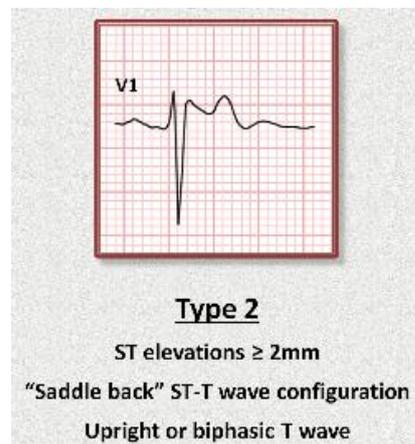
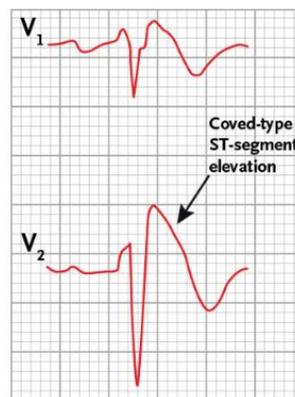


Brugada syndrome is a Na channelopathy, so drugs to avoid include Na channel blockers, notably flecainide (which induces Brugada pattern ECG changes) and others as listed. Turns out metoprolol is safe. Cardioversion is an option, though avoid propofol for sedation.



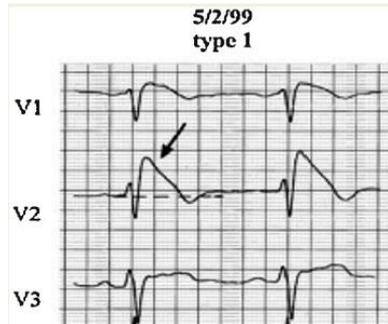
Not all Brugada's are created equal. Which is the nasty one?

The coved type carries greater risk.

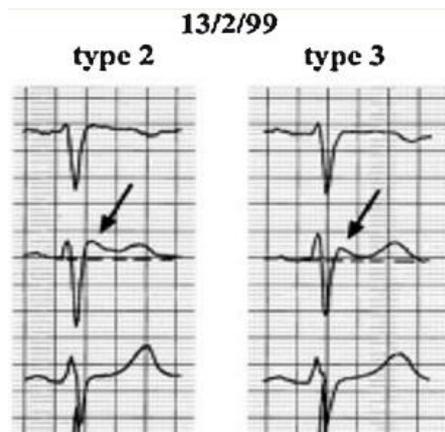


The saddle back type carries less risk. There are 2 variants of the saddle back type, making 3 Brugada patterns.

Of note the ECG findings can be transient and may only be apparent under certain conditions such as with fever or with drug use. The patterns also vary – the following shows the 3 patterns which are all on the same patient at different times post cardiac arrest.



V 1-3 leads of a resuscitated patient showing a cove type Brugada Syndrome (BrS) pattern.



The same patient 8 days - saddleback pattern.

Thinking on risk stratification has evolved with recognition of patterns at higher risk, or conversely at lower risk not needing intervention. AICD is the relevant intervention to prevent sudden cardiac death, but can have significant complications. Drugs do not prevent sudden cardiac death.



INTERACTIVE MEDICAL CASE

A Shocking Turn of Events

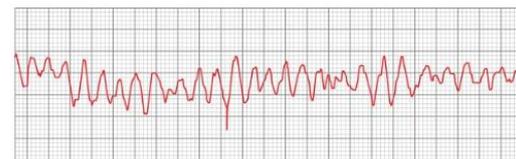
https://www.nejm.org/doi/full/10.1056/NEJMc1710576?query=featured_home May 2018

A good review and case discussion.

Diagnosis requires that patients have a Brugada type 1 ECG pattern (coved-type ST-segment elevation) **AND** meet at least one of the following clinical diagnostic criteria:

- Documented VF or polymorphic VT
- History of sudden cardiac death of family members younger than 45 years of age
- Family members with coved-type ECGs
- Inducibility of ventricular tachycardia with programmed electrical stimulation
- Syncope
- Nocturnal agonal respiration

ICD placement should be considered for confirmed diagnosis of the Brugada syndrome AND high risk features such as prior syncope or ventricular arrhythmias.



Asymptomatic patients without those features are not at high risk for sudden cardiac death.

Treatment of acute malignant arrhythmias / electrical storm

Defibrillate if necessary; treat precipitants (fever, stop arrhythmogenic drugs/substances, correct electrolyte abnormalities).

Isoprenaline bolus and infusion (may worsen some types as rate increases; beta blocker may help those cases by reducing rate).

Anaesthesia requires special precautions. Propofol may worsen some types, though has been used successfully in Brugada syndrome.

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1443-9506/15/2516-00
<http://dx.doi.org/10.1093/ehj/ehz2015.07.020>

POSITION STATEMENT

Update on the Diagnosis and Management of Brugada Syndrome

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A useful review.

These updates are a review of current literature at the time of writing and are the views of Dr Brendon Smith, FACEM. Over time they will become outdated. They do not replace local treatment protocols and policy. Treating doctors are individually responsible for following standard of care.