

Potential antiarrhythmic drugs in Brugada syndrome patients

The following drugs have been described in case reports or relatively small series as potential antiarrhythmic drugs in Brugada syndrome patients. Although promising, the [BrugadaDrugs.org Advisory Board](#) stresses that the utmost care should be taken when using these drugs in the acute or chronic setting in Brugada syndrome patients. None of these drugs have proofed to completely prevent arrhythmias, some drugs have not been tested to an appreciable extent in Brugada syndrome patients and some drugs may have unacceptable side-effects. Preferably only (severely) symptomatic or otherwise high-risk patients in the absence of provoking drugs may be candidates for chronic therapeutic treatment in an experienced medical center. Currently, Quinidine seems to be the treatment of choice for chronic therapy. Recently a prospective registry has started investigating the use of empiric Quinidine therapy for asymptomatic Brugada syndrome patients: [Viskin et al. 2009](#)

As mentioned earlier, avoidance of provocative drugs/substances and timely treatment of fever is probably the most effective and safe treatment in many Brugada syndrome patients. However, some Brugada syndrome patients may (only) be appropriately treated with an implantable cardioverter defibrillator.

Acute treatment of arrhythmias has been described as follows:

Treatment of **acute malignant arrhythmias / electrical storm** has been commenced in 4 steps:

- Defibrillate/resuscitate if necessary
- Admit to specialized cardiac care unit / intensive care unit
- Stop / remove / treat provocative circumstances: 1) Treatment of fever by antipyretics and/or cooling together with treatment of fever origin; 2) Stop arrhythmogenic drugs/substances and/or treat arrhythmogenic drugs/substances overdose
- Therapeutic treatment with: 1) isoproterenol/isoprenaline (1 to 2 µg bolus i.v. followed by continuous infusion of 0.15-2.0 µg/min) and/or 2) quinidine (300 to 500 mg b.i.d. or t.i.d.). Be aware that for children dosing is often tailored to bodyweight. In adults an isoproterenol regimen of 0.003±0.003 µg/kg/min has been used by [Ohgo et al.](#) and 0.01 to 0.02 µg/kg/min has been used by [Kasanuki et al.](#) Aim at quinidine plasma levels of 1-3 µg/mL or 3.5-11 µmol/L.
- Advised references: [Ohgo et al. 2007](#), [Watanabe et al. 2006](#), [Probst et al. 2007](#)

Notes about the lists:

- On this list we summarized the drugs for which there is literature available on a possible antiarrhythmic effect in Brugada syndrome
- Drugs are listed with up to 3 common brand names. There are several brand names for many of the drugs, which are not all listed. It is also important to look at the active drugs in medicines that contain a combination of drugs.
- Lists contain links to [DrugBank](#) or [PubChem](#) (click on the drug name) and also (several) [PubMed](#) links to articles on the association between the drug and Brugada syndrome (click on the reference).
- Download a pdf-file of this page [here](#)
- Lists contain a classifying column '**Recommendation**' in which the available evidence from the literature and the expert opinion of the [BrugadaDrugs.org Advisory Board](#) is described. Please note that there are no randomized clinical studies in Brugada syndrome patients, therefore the level of evidence is mostly C (only consensus opinion of experts, case studies, or standard-of-care) and for some B (non-randomized studies).
 - **Class I:** There is evidence and/or general agreement that a given drug is potentially antiarrhythmic in Brugada syndrome patients.
 - **Class IIa:** There is conflicting evidence and/or divergence of opinion about the

- **Class IIa:** There is conflicting evidence and/or divergence of opinion about the drug, but the weight of evidence/opinion is in favor of a potentially antiarrhythmic effect in Brugada syndrome patients.
- **Class IIb:** There is conflicting evidence and/or divergence of opinion about the drug, and the potential antiarrhythmic effect in Brugada syndrome patients is less well established by evidence/opinion.
- **Class III:** There is no or very little evidence and/or general agreement that a drug is potentially antiarrhythmic in Brugada syndrome patients

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Drugs with potential antiarrhythmic effect

(Alphabetical order generic name)

Generic name	Brand name®	Class / Clinical use	References	Ref. coding
Cilostazol	e.g. Pletal®	Phosphodiesterase inhibitor	Tsuchiya et al. 2002 Abud et al. 2006 Matsui et al. 1999	Class IIb
Isoproterenol Isoprenaline	e.g. Isuprel®	Beta-adrenergic receptor stimulation	Miyazaki et al. 1996 Watanabe et al. 2006 Ohgo et al. 2007 Ganesan et al. 2006	Class I
Orciprenaline	e.g. Alotec® Metaprel® Novasmasol®	Beta-adrenergic receptor stimulation	Kyriazis et al. 2009	Class IIa
Quinidine	e.g. Quinalan® Chinidin®	Antiarrhythmic Agent	Alings et al. 2001 Belhassen et al. 2004 Probst et al. 2007 Ohgo et al. 2007 Yan et al. 1999	Class I

Recommendation: Class I: convincing evidence/opinion; Class IIa: evidence/opinion less clear; Class IIb: conflicting evidence/opinion; Class III: very little evidence.

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Principal limitation

It should be clear to the users of this site that the principal limitation of the association between certain drugs, Brugada syndrome and arrhythmias, is that there are quite often only (a number of) case reports and experimental studies suggesting an effect in Brugada syndrome. Further, there may be conflicting results and there may be large variability for Brugada syndrome patients in their response to certain drugs. This response may also differ in different conditions (e.g. with or without fever, drug in therapeutic range, overdosed or in combination with other drugs etc.). Clinical decision making should be based on more than the presence or absence of a (single) association in another patient.