SINDROME DI BRUGADA

ACC/AHA/ESC 2006 Guidelines for Management of Patients With Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death

Recommendations

Class I

An **ICD is indicated for Brugada syndrome patients with previous cardiac arrest** receiving chronic optimal medical therapy and who have reasonable expectation of survival with a good functional status for more than 1 y. *(Level of Evidence: C)*

Class IIa

1. An **ICD is reasonable for Brugada syndrome patients with spontaneous ST-segment elevation in V1, V2, or V3 who have had syncope** with or without mutations demonstrated in the *SCN5A* gene and who have reasonable expectation of survival with a good functional status for more than 1 y. *(Level of Evidence: C)*

2. Clinical monitoring for the development of a spontaneous ST-segment elevation pattern is reasonable for the management of patients with ST-segment elevation induced only with provocative pharmacological challenge with or without symptoms. *(Level of Evidence: C)*

3. An **ICD is reasonable for Brugada syndrome patients with documented VT that has not resulted in cardiac arrest** and who have reasonable expectation of survival with a good functional status for more than 1 y. *(Level of Evidence: C)*

4. Isoproterenol can be useful to treat an electrical storm in the Brugada syndrome. *(Level of Evidence: C)*

Class IIb

1. EP testing may be considered for risk stratification in asymptomatic Brugada syndrome patients with spontaneous ST elevation with or without a mutation in the *SCN5A* gene. *(Level of Evidence: C)*

2. Quinidine might be reasonable for the treatment of electrical storm in patients with Brugada syndrome. *(Level of Evidence: C)*

Causes and Risk Factors

The Brugada syndrome is associated with a characteristically abnormal ECG and a high risk of SCD in individuals with a structurally normal heart . The Brugada pattern ECG shows J-point segment elevation in leads V1 to V3 and RBBB in some patients; the ECG pattern can be present always or intermittently. Occasionally, J-point elevation hasbeen reported in other (e.g., inferior) leads. The disease is transmitted with an **autosomal dominant** pattern of inheritance. The clinical expression of the phenotype is modified by gender as 90% of the affected individuals with a diagnostic ECG are male. Only 1 Brugada syndrome disease gene has been identified so far, **the cardiac sodium channel gene (*SCN5A*)**; non-*SCN5A* loci have also been reported but the disease gene(s) at these loci remain to be identified. Cardiac events (syncope or cardiac arrest) occur predominantly in males in the third and fourth decades of life, although presentation with cardiac arrest in neonates or children have been reported . Fever is a predisposing factor for cardiac arrest in the Brugada syndrome

Risk Stratification

Because implantation of an ICD is the only prophylactic measure able to prevent SCD, risk stratification is of major importance in these patients.

Family History

As with LQTS, there are no data showing that family history predicts cardiac events among family members. Therefore, it should not be assumed **that asymptomatic individuals with the characteristic ECG but without family history are at low risk or** that family members of an individual with SCD are at increased risk .

Electrocardiography

ST-segment elevation can occur spontaneously or be exposed by administration of sodium channel blockers such as flecainide, procainamide, or ajmaline . There is agreement that patients with a spontaneous pattern have a worse prognosis than individuals in whom the typical ECG is observed only after pharmacological drug challenge

Clinical Symptoms

Patients with history of syncope and the ECG pattern of spontaneous ST-segment elevation have a 6-fold higher risk of cardiac arrest than patients without syncope and the spontaneous ECG pattern

Electrophysiological Testing

The role of EP testing for risk stratification is debated. Brugada et al. suggested that EP testing has a pivotal role in risk stratification: in their large study**, EP testing had a low positive predictive value (23%), but over a 3-y follow-up, it had a very high negative predictive value (93%).** By contrast, Priori et al. reported that EP testing has a low accuracy in predicting individuals who will experience cardiac arrest. Priori et al. proposed that noninvasive risk stratification based on the ECG and symptoms provides an accurate alternative for risk stratification.

Genetic Defect

Because only a single gene has been linked to the Brugada syndrome, there is still insufficient information about the contribution of genetic defects in predicting clinical outcome.**Mutations in the SCN5A gene do not identify a subset of patients at higher risk of cardiac events** .

Ventricular Arrhythmias

SCD is caused by rapid polymorphic VT or VF frequently occurring at rest or during sleep. Patients with Brugada syndrome usually do not have ventricular extrasystoles or nonsustained runs of VT at Holter recording. Therefore, the therapeutic approach for these patients is centered on the prevention of cardiac arrest. Basic science studies and clinical studies suggest a role for block of the transient outward potassium current by quinidine in reducing arrhythmia frequency . Quinidine and isoproterenol may be useful in patients with arrhythmia stormeven in the presence of an ICD .

Genetic Analysis

Genetic analysis may help identify silent carriers of Brugada syndrome-related mutations so that they can remain under clinical monitoring to detect early manifestations of the syndrome. Furthermore, once identified, silent mutation carriers should receive genetic counseling and discussion of the risk of transmitting the disease to off- spring. Based on current knowledge, genetic analysis does not contribute to risk stratification.

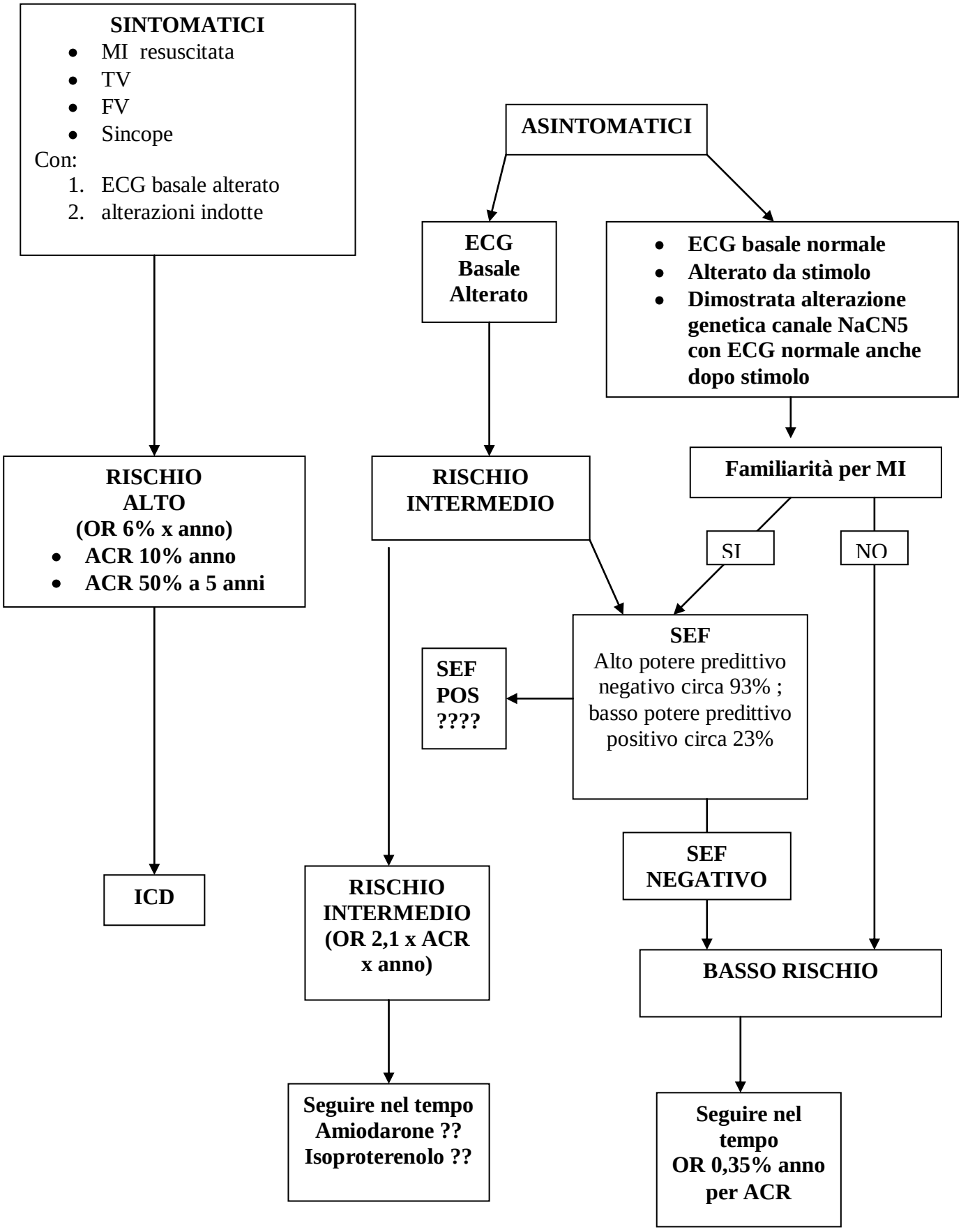
TABELLA I Farmaci da evitare nella sindrome di Brugada

CONTROINDICAZIONE ASSOLUTA

Gruppo	Categoria	Principio attivo	Effetto
Antiaritmici	Classe IA	Ajmalina, disopiramide, procainamide	Proaritmico
	Classe IC	Encainide, flecainide, pilsicainide, propafenone	Proaritmico
Antidepressivi	Triciclici	Amitriptilina, clomipramina, desipramina, dotiepina, imipramina, lofepramina, ecc.	Proaritmico

CONTROINDICAZIONE RELATIVA

Gruppo	Categoria	Principio attivo	Effetto
Analgesici	Oppiodi	Propoxifene cloridrato	Sopra ST
Antidepressivi	Non-triciclici	Venlafaxina	Sopra ST
Antiemetici		Dimenidrinato	Sopra ST
Psicolettici	Antipsicotici	Litio	Sopra ST


SINTOMATICI
MI resuscitata
TV
FV
Sincope
Con:
1. ECG basale alterato
2. alterazioni indotte
ASINTOMATICI
ECG Basale Alterato
ECG basale normale
Alterato da stimolo
Dimostrata alterazione genetica canale NaCN5 con ECG normale anche dopo stimolo
RISCHIO ALTO (OR 6% x anno)
ACR 10% anno
ACR 50% a 5 anni
RISCHIO INTERMEDIO
Familiarità per MI
SI
NO
SEF
Alto potere predittivo negativo circa 93% ; basso potere predittivo positivo circa 23%
SEF POS ????
SEF NEGATIVO
ICD
RISCHIO INTERMEDIO (OR 2,1 x ACR x anno)
BASSO RISCHIO
Seguire nel tempo Amiodarone ?? Isoproterenolo ??
Seguire nel tempo OR 0,35% anno per ACR