



EDITORIAL COMMENT

Pre-excited atrial fibrillation: A lower threshold for electrical cardioversion

Fibrilhação auricular pré-excitada – limiar mais baixo para cardioversão elétrica

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Wolff-Parkinson-White syndrome is characterized by the presence of ventricular pre-excitation on the electrocardiogram (ECG) and associated tachycardia symptoms. The characteristic electrocardiographic pattern is present in 0.1–0.2% of the general population and in most cases is an incidental finding. Pre-excitation may, however, not be detected as it appears only intermittently or is very subtle and goes unnoticed on the ECG (such as in left lateral pathways, far from the atrioventricular [AV] node). The most frequent arrhythmia in patients with this syndrome is AV reentry tachycardia (about 80%) followed by atrial fibrillation (AF), which occurs in 20–30%. Most patients with asymptomatic pre-excitation have a good prognosis, but sudden death occurs in 1.25 per 1000 person-years¹ and may be the first manifestation of the disease. Sudden death has been attributed to the coexistence of AF and accessory pathways with a short antegrade refractory period leading to a very fast ventricular response and subsequent degeneration into ventricular fibrillation (VF).

The case report presented by Nunes et al. in this issue of the *Journal*² describes a patient admitted with irregular

wide-complex tachycardia, compatible with pre-excited AF but not promptly diagnosed, and who developed VF after administration of AV nodal blockers. This case has the merit of reminding us, from a practical point of view, of the importance of recognizing the initial dysrhythmic condition described and alerting us to the deleterious consequences that the misuse of certain drugs can cause in those circumstances.

The presence of a rapid, irregular wide QRS complex tachycardia, with variations in morphology resulting from various degrees of fusion, but without major changes in the electrical axis (unlike polymorphic VT), should immediately raise the suspicion of a pre-excited AF. Baseline pre-excitation on a previous ECG reinforces the diagnosis, but we must remember that it can be very discreet and go unrecognized, or intermittent, and as such may not be detected. Hemodynamically unstable patients require urgent electrical cardioversion. Intravenous drugs have been used in more stable patients. The use of AV nodal blockers such as beta-blockers, adenosine, diltiazem, verapamil³ or digoxin, which are widely used in supraventricular tachycardias, can have harmful consequences in these situations, given the risk of accelerating AV conduction through the accessory pathway, leading to hemodynamic instability and

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greater probability of deterioration into VF.³ An increase in sympathetic tone may also contribute to this, secondary to a decrease in contractility and peripheral arterial resistance. Drugs that preferentially act on the accessory pathway, such as ibutilide⁴ or procainamide (which also has effects on the atrial myocardium), are the initial choice in more stable patients, but they are not always available. Class Ic antiarrhythmic drugs (flecainide and propafenone) can also be used, but with caution given their effects on the AV node, and are even contraindicated in the presence of associated structural heart disease. Even amiodarone, a broad-spectrum antiarrhythmic agent that has beta-adrenergic and calcium channel blocking effects and is frequently used in emergency situations, does not appear to be as safe as previously thought and should not be used (class of recommendation III in the 2019 European Society of Cardiology guidelines).⁵ All these indications lower the threshold for the use of electrical cardioversion in most of these patients. The preferred definitive treatment is currently catheter ablation.

Conflicts of interest

The author has no conflicts of interest to declare.

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