Occurrence of recently diagnosed atrial fibrillation in the immediate postoperative period of myocardial revascularization surgery. Although common, a devalued complication

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SUMMARY

Atrial fibrillation (AF) is the most common arrhythmia in the postoperative period of cardiac surgery, with a prevalence between 15-40% after coronary artery bypass surgery (CABG). Several strategies have been tested for the prevention and management of AF postoperatively. Previous studies and analysis of records have shown higher rates of hospitalization and clinical outcomes associated with this entity, including increased mortality in the short- and long-term. This perspective reviews the topic, and offers recommendations for the management of this arrhythmia in the postoperative period of CABG, with a special focus on anticoagulation strategies.

KEYWORDS: *Cardiac surgery; Coronary artery bypass graft; Atrial fibrillation; New postoperative atrial fibrillation after coronary artery bypass graft; Anticoagulants.*

Atrial fibrillation (AF) is the most common arrhythmia in clinical practice. Its occurrence is common in the postoperative period of cardiac surgery, with a prevalence between 15-40% in coronary artery bypass grafting (CABG), as well as the most common complication of this surgery[1-6]. The peak incidence occurs on around the 2nd postoperative day. The pathogenesis is multifactorial and probably involves adrenergic stress related to the surgical procedure, inflammation, myocardial ischemia (including atrial), hydroelectrolytic disorders, hypoxia, postoperative pain, and genetic factors[1-7].

Several strategies to reduce new postoperative atrial fibrillation (POAF) have been tested. Prophylactic use of beta-blockers and amiodarone are indicated for the prevention of POAF by specific societies[2,8].

In previous studies, the incidence of POAF is more common in elderly patients, or those with a lower

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ejection fraction, and patients with comorbidities, such as hypertension, diabetes, chronic obstructive pulmonary disease, and renal dysfunction[4,5,9,10,11]. Gillinov et al[3], demonstrated there was no difference in the length of hospital stay in relation to strategies of rate versus rhythm control in POAF. This same study found that maintenance of the sinus rhythm at hospital discharge, through 60 days of follow-up, was approximately 85%, regardless of strategy. In addition, a prescription for warfarin was mandatory if AF lasted more than 48 hours, and this prescription occurred in approximately 43% of cases, with an average duration of 44 days.

The occurrence of this arrhythmia increases hospital costs and length of stay[4,9,12]. In a registry with 49,264 patients, the presence of POAF increased the rate of ICU stay in 48 hours (relative risk (RR) 47.55), hospital stay in 3 days (RR 2.93) and the total hospital cost by 9000 dollars (RR 7.62)[6]. In addition, several records showed that patients who presented POAF had higher rates of outcomes in the short- and long-term. Steinberg et al showed an increase in mortality and stroke rate during hospital stay and at the 30-day follow-up[4]. In a meta-analysis with more than 109 thousand patients, Phan et al demonstrated that POAF increased mortality in 30 days (RR 1.95), with in-hospital complications and stroke rate (relative risk 2.06) [6].

Regarding long-term outcomes, several publications have shown increased mortality and thromboembolic events associated with arrhythmia[5,6,9,10,11]. El-Chami et al[9], evaluated more than 16 thousand CABGs, with POAF occurring in 18.5% of patients. In the 6-year follow-up (with a difference in the first year), it was noted that there was an increased risk of mortality. At follow-up, 20.5% of patients in the POAF group were anticoagulated with warfarin and compared to those not anticoagulated; in multivariate analysis, a protective effect of this medication was demonstrated with a 22% reduction in mortality. The EXCEL study compared percutaneous intervention (PCI) strategies versus CABG in elective patients with obstructive lesions in the left main coronary artery. A subanalysis of this study, published in 2018, found a difference in the incidence of AF in patients with a prevalence of 18% in surgical patients and 0.1% in PCI patients. POAF was defined as AF lasting more than 30 seconds on electrocardiographic or monitor documentation, and intervention for arrhythmia. At discharge, 85% of patients' arrhythmia resolved. In the 3-year follow-up, POAF was linked to increased death rates, stroke, and in the composite, outcome of death, acute myocardial infarction, and stroke. Anticoagulation medications were used in 10.1% of patients with POAF, under warfarin[10].

It has been noted that POAF is, in most cases, a transient condition, which can resolve spontaneously or after medications to control rate or rhythm. Despite this, it has a clear relationship with clinical events, death and stroke, increased costs, and hospital stay. In addition, anticoagulation is recommended in these patients[1,2,8]. It is common practice to initiate anticoagulation in those at higher risk, defined as CHA2DS2-VASC greater than or equal to 2 for those who had this arrhythmia for more than 48 hours[13].

However, many records show that POAF may last less than 48 hours; this demonstrates that the presence of this condition is already considered a risk during hospitalization, both short- and long-term for the patient. In relation to anticoagulation strategies, there are data on the prescription of such medications that improve outcomes and are indicated in this scenario. However, recent studies show low prescription rates for this class of drugs and, when prescribed, the conventional prescription was warfarin, and direct-action anticoagulants (DOACS) were not tested in trials in this scenario. Although already valid in the AF lato sensu scenario, DOACS need more studies for prescriptions in this population. In a pilot study[14] with edoxaban, it was shown that this medication in patients with POAF did not increase bleeding rates compared to placebo in 2 months. In another retrospective study with 598 patients, 27.9% developed POAF. Anticoagulation prescriptions occurred in 72 patients, 34.7% with DOACS. There was no difference in bleeding outcomes at the 30-day follow-up[15].

Therefore, we believe that despite being common and associated with a worse prognosis, POAF still remains an undertreated nosological entity. The prescription of anticoagulants in AF lato sensu has been well-established, and although recommended in the POAF scenario, it carries some inertia for use in the real world. American recommendations are to prescribe anticoagulant medication for 2 to 3 months, and if the patient has no recurrence of the arrhythmia, the medication can be discontinued[1]. The European Society of Cardiology, in its AF guidelines, recommends anticoagulation without determining the duration[2]. The Cardiothoracic Surgery Society recommends anticoagulation for at least 4 weeks in patients discharged

on AF[8]. We believe that warfarin is the standard drug, but is difficult to manage, thus making it harder to prescribe this drug class. We believe that anticoagulation should be prescribed even during hospitalization, and its maintenance reassessed after 30 to 90 days, actively researching the recurrence of arrhythmia with clinical data and the Holter monitor, according to guidelines. It then becomes reasonable to consider medication discontinuation if the patient has a low risk of recurrence of this arrhythmia. In addition, we believe that the lack of evidence and / or access to DOACS also make it difficult to prescribe this drug class, and as such, further studies with these drugs are needed.

PALAVRAS CHAVE: *Procedimentos Cirúrgicos Cardíacos. Revascularização Miocárdica. Ponte de Artéria Coronária. Fibrilação atrial. Anticoagulantes.*

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