of hospital discharge; and 1 conversion to full median sternotomy due to bleeding after the procedure was finished, caused by damage to the pulmonary artery after release of the aortic clamp. The remaining patients’ hospital stays were < 5 days, with no postoperative pain and recovery of normal activities in 2 weeks (Figure). Therefore, regarding morbidity and mortality, the results of our series are comparable to those of other published studies.1,4

According to the literature, compared with those with conventional treatments, patients who undergo surgery with minimally invasive approaches have fewer arrhythmias, less bleeding and need for transfusion, shorter stays in intensive care and in hospital, earlier extubation, less postoperative pain, and an earlier recovery of functional status and daily activities, with greater patient satisfaction and a better aesthetic result.1,2 Despite the lower morbidity, these techniques are not performed routinely in all hospitals, as they are more technically demanding for the surgeons, have longer operating times (ischemia time and extracorporeal circulation time), and are accompanied by the corresponding learning curves and need for dedicated, costly materials.1,3 In the future development of cardiac surgery, minimally invasive surgery has an essential role in responding to the demands of both patients and cardiologists; it is comparable to interventional procedures2 and an excellent technique for the surgical approach in patients with previous cardiac surgery.1,2,4,6 Therefore, in various hospitals, minimally invasive surgery appears to be an increasingly popular technique as an alternative to conventional surgery. Prospective, randomized studies are needed to allow a better evaluation of the clinical outcomes and cost-efficiency of this technique.

Gemma Sánchez-Espin,* Juan J. Otero, Emiliano A. Rodríguez, María J. Mataró, Carlos Porras, and José M. Melero

Unidad de Gestión Clínica del Corazón y Patología Cardiovascular, Servicio de Cirugía Cardiaca, Hospital Universitario Virgen de la Victoria, Málaga, Spain

*Corresponding author:
E-mail address: gemmase@hotmail.com (G. Sánchez-Espin).
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One-year Non-persistence With Contemporary Antiplatelet Therapy in Acute Coronary Syndrome Patients Undergoing Percutaneous Coronary Intervention

Falta de persistencia con el tratamiento antiplaquetario contemporáneo al año en pacientes con síndrome coronario agudo sometidos a intervención coronaria percutánea

To the Editor,

In patients with acute coronary syndrome (ACS) undergoing percutaneous coronary intervention (PCI), nonpersistence with antiplatelet therapy prescribed at discharge may lead to worse outcomes.1 Apart from treatment cessation, nonpersistence may take the form of switching from one agent to another, which is common in everyday clinical practice.2 We present insights from the GREek AntiPlatelet Registry (GRAPE) on 1-year nonpersistence with treatment prescribed at discharge.

GRAPE is a prospective, observational, multicenter, cohort study involving consecutive, moderate-to-high risk ACS patients undergoing PCI. Initial P2Y12 receptor antagonist selection along with the subsequent in-hospital and postdischarge antiplatelet agent administration were left to the discretion of the treating clinician. Follow-up was performed at 1, 6, and 12 months by telephone interview or personal contact. Persistence with P2Y12 receptor antagonists was defined as conforming to the recommendation of continuing the same P2Y12 receptor antagonist as that prescribed at discharge. Switching was defined as changing to a different P2Y12 receptor antagonist than that prescribed at discharge, and cessation as not receiving any P2Y12 receptor antagonist.

To assess potential predictive factors for cessation and switching, we used logistic regression modelling and adjusted for type of P2Y12 receptor antagonist, oral anticoagulant, male sex, age (in decades), body mass index (per 5 kg/m2), diabetes mellitus, hypertension, smoking, reason for admission, prior bleeding, creatinine clearance (calculated by the Cockcroft-Gault formula) < 60 ml/min, and PCI without stenting or with only bare metal stent use. The model was tested for discriminative power by the C-statistic. Informed consent was obtained from each patient and the protocol was approved by each institution’s human research committee. GRAPE has been registered at clinical trials (NCT01774955).

At 1 year, 101 (5%) patients were lost to follow-up, while data on P2Y12 receptor antagonist medication at 1 year were analyzable in 2005 patients. The nonpersistence rate was 24.2% (485 of 2005), with 55.5% (269 of 485) of nonpersistence patients having switched to a different P2Y12 receptor antagonist, while 44.5% (216 of 485) had discontinued the P2Y12 receptor antagonist. The nonpersistence rate was higher for prasugrel (21.5%) and ticagrelor (37.3%) than for clopidogrel (13.3%), P < .001 for both, and was higher for ticagrelor than for prasugrel, P < .001. Differences were mainly driven by the higher rate of switching among patients discharged under novel P2Y12 receptor antagonists (2.5%, 13.2%, and 25.0% for clopidogrel, prasugrel, and ticagrelor, respectively), while the cessation rate did not differ among groups (10.9%, 8.3%, and 12.3% for clopidogrel, prasugrel, and ticagrelor, respectively). Out of 269 patients in the switching group, 191 (71.0%) switched from a
novel agent (prasugrel or ticagrelor) to clopidogrel, 19 (7.1%) switched from clopidogrel to a novel agent, and 59 (21.9%) switched between novel agents. Patients’ demographic and clinical characteristics are shown in Table. Multivariate predictive models for cessation and switching (Figure) demonstrated fair discriminative power (C-statistic = 0.64; 95% confidence interval [95%CI], 0.59-0.68; P < .001 and C-statistic = 0.77; 95%CI, 0.74-0.79; P < .001, respectively). Reasons for nonpersistence and 1 year outcomes are provided in the supplementary material.

In GRAPE, at 1 year, differential switching from discharge medication rate was observed among the 3 P2Y12 receptor antagonists, being lowest for clopidogrel. Most importantly, to our knowledge, this report describes for the first time that patients prescribed ticagrelor demonstrate the worst behavior concerning persistence with discharge P2Y12 receptor antagonist, which is driven mainly by the high switching rate. Ticagrelor is the P2Y12 receptor antagonist most recently introduced into clinical practice and is the least well studied outside the setting of clinical trials.
**Figure.** Multivariate analysis of factors affecting cessation (A) and switching (B) assessed at 1 year. 95% CI, 95% confidence interval; BMI, body mass index; BMS, bare metal stent; CrCl, creatinine clearance; NSTEMI, non–ST-elevation acute myocardial infarction; OR, odds ratio; PCI, percutaneous coronary intervention; STEMI, ST-segment elevation myocardial infarction.
Supplementary material associated with this article can be found in the online version available at doi:10.1016/j.rec.2016.03.028.

John Goudevenos,a Ioanna Xanthopoulou,b Spyridon Deftereos,c and Dimitrios Alexopoulosd,b,*

*aDepartment of Cardiology, Ioanna University Hospital, Ioannina, Greece  
bDepartment of Cardiology, Patras University Hospital, Patras, Greece  
cDepartment of Cardiology, Athens General Hospital “G. Gennimatas”, Athens, Greece  
*d Corresponding author:  
E-mail address: dalex@med.upatras.gr (D. Alexopoulos).

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SUPPLEMENTARY MATERIAL

Changes in Conduction Properties of Accessory Pathways: From Intermittent Pre-excitation to Rapid Pre-excited Ventricular Response to Atrial Fibrillation

Cambios en las propiedades de conducción de las vías accesorias: de preexcitación intermitente a fibrilación auricular preexcitada de riesgo

To the Editor,

We present the case of a 49-year-old man with left posterior accessory pathway (AP) pre-excitation in a resting electrocardiogram (ECG) recorded in 2005. He was asymptomatic at the time. A screening electrophysiological study (EPS), without arrhythmogenic drugs, conducted because the patients was a sports player, showed anterograde block of the pathway at 750 ms and absence of retrograde conduction. The refractory period of the pathway was 680 ms with isoproterenol at 2 μg/kg/min. After the atrioventricular node reached the Wenckebach block (340 ms), atrial fibrillation (AF) was provoked, with a heart rate of 130 bpm and no pre-excitation observed. Electric cardioversion was required after persistence of AF for 15 minutes (the recordings are not available). The pathway was considered low risk and clinical follow-up was decided.

The patient was asymptomatic until 2015, when he attended the clinic for palpitations and presyncope. Atrial fibrillation with pre-excitation was observed with a shorter pre-excited RK interval of 230 ms (Figure 1A). After administration of an amiodarone bolus, the patient reverted to sinus rhythm with constant pre-excitation (Figure 1B). The findings of the EPS were once again low risk, with intermittent pre-excitation at baseline (Figure 2A), anterograde block of the pathway at 580 ms (Figure 2B) and retrograde conduction, and no changes with isoproterenol. In view