Selection of the Best of 2017 in Clinical Cardiology. Therapeutic Novelties

Selección de lo mejor del año 2017 en cardiología clínica. Novedades terapéuticas

To the Editor,

In the last year, various substantial therapeutic advances have been made in the field of clinical cardiology; although numerous, we will focus on 3 areas that are highly relevant for our daily practice: diabetes, ischemic heart disease and nonvalvular atrial fibrillation (NVAF), and dyslipidemia.

In recent years, there has been a true revolution in diabetic patient care. Until a decade ago, although it was known that antidiabetic therapy effectively reduced glycated hemoglobin (HBA_{1c}) to the recommended levels and that this reduction was associated with decreases in microvascular complications, the benefit on macrovascular complications, including myocardial infarction, was unclear. In addition, intensive antidiabetic therapy could be harmful for certain frail patients, such as the elderly, or those with longstanding diabetes or more comorbidities. There were also doubts about the cardiovascular safety of some antidiabetic drugs. Since then, antidiabetic drug approval has been contingent on proven cardiovascular safety. This is what happened with dipeptidyl peptidase-4 inhibitors, which were generally shown not to increase cardiovascular risk. However, because the EMPA-REG OUTCOME study[1] found that empagliflozin was associated with fewer cardiovascular events, the paradigm has shifted. Now, these drugs must not only not harm the cardiovascular system, but should be beneficial. One of the latest clinical trials to be published is the CANVAS study,[2] which has also shown that canagliflozin reduces cardiovascular events, even if it increases amputation risk. Irrespective of this consideration, a new approach to diabetes therapy has been implemented. We must go beyond a reduction in HbA_{1c}. Antidiabetic therapy also has to reduce cardiovascular events.

To date, in patients with NVAF with an implanted stent and indication for anticoagulation, the treatment strategy comprised triple antiplatelet therapy with vitamin K antagonists (VKAs), aspirin, and clopidogrel, with a duration that depended on the stent type (mainly bare metal or drug-eluting) and the clinical context (acute coronary syndrome or stable angina). The problem is that, although this therapeutic strategy effectively reduces the risk of both stroke and stent thrombosis, it is associated with high risk of bleeding. However, trials such as the PIONEER AF-PCI[3] with rivaroxaban and the RE-DUAL PCI[4] with dabigatran will change the clinical practice in the coming years. In both cases, dual antiplatelet therapy (rivaroxaban 15 mg-10 mg for those with creatinine clearance 30-50 mL/min–plus a $P2Y_{12}$ inhibitor in the PIONEER AF-PCI trial; dabigatran 110 or 150 mg-110 mg for those 80 years or older outside the United States/70 years or older in Japan–plus a $P2Y_{12}$ inhibitor in the RE-DUAL PCI trial) was associated with a lower bleeding risk vs triple therapy, without an increased risk of new thromboembolic complications. These studies indicate that, in patients with AF and an indication for anticoagulation who have just undergone stent implantation, the approach should involve dual antiplatelet therapy with an oral anticoagulant, preferably one with direct action due to their advantages over VKAs, and a $P2Y_{12}$ inhibitor, instead of the classic triple antiplatelet therapy.

PCSK9 inhibitors are one of the most important novelties in recent years in the treatment of patients with dyslipidemia and have changed the clinical practice of cardiologists. Not only are orally administered drugs available, but also subcutaneously administered antibodies. Together, they drastically reduce low-density lipoprotein-cholesterol (LDL-C) levels. Nonetheless, the FOURIER study was the first to show that this strategy, in this case with evolocumab, reduced cardiovascular events in high-risk patients.[5] The results of the ODYSSEY trial with alirocumab (NCT02715726) will soon be available, which will undoubtedly strengthen the position of PCSK9 inhibitors in the lipid-lowering therapeutic arsenal. In addition, this approach might even help higher-risk patients to achieve LDL-C targets. Indeed, a substudy of the FOURIER trial showed cardiovascular benefits when very low LDL-C levels are achieved (even < 10 mg/dL) without increased adverse effects.[6] Finally, anacetrapib, the latest cholesteryl ester transfer protein (CETP) inhibitor to be studied, has been shown to reduce cardiovascular events in patients with a previous event and very low LDL-C concentrations.

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REFERENCES

1. Zinman B, Wanner C, Lachin JM, et al. Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. *N Engl J Med.* 2015;373:2117–2128.
2. Neal B, Perkovic V, Mahaffey KW, et al. Canagliflozin and cardiovascular and renal events in type 2 diabetes. *N Engl J Med.* 2017;377:644–657.
3. Gibson CM, Mehran R, Bode C, et al. Prevention of bleeding in patients with atrial fibrillation undergoing PCI. *N Engl J Med.* 2016;375:2423–2434.
4. Cannon CP, Bhatt DL, Oldgren J, et al. Dual antithrombotic therapy with dabigatran after PCI in atrial fibrillation. *N Engl J Med.* 2017. http://dx.doi.org/10.1056/NEJMoa1708454. Accessed 27 Aug 2017.
5. Sabatine MS, Giugliano RP, Keech AC, et al. Evolocumab and clinical outcomes in patients with cardiovascular disease. *N Engl J Med.* 2017;376:1713–1722.
6. Giugliano RP, Pedersen TR, Park JG, et al. Clinical efficacy and safety of achieving very low LDL-cholesterol concentrations with the PCSK9 inhibitor evolocumab: a pre-specified secondary analysis of the FOURIER trial. *Lancet.* 2017. http://dx.doi.org/10.1016/S0140-6736(17)32290-0. Accessed 25 Aug 2017.

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