Patients with diabetes mellitus consistently have shown a less favorable angiographic and clinical outcome after balloon angioplasty with or without bare metal stents (BMS) as compared to nondiabetic patients. Diabetic patients have an increased risk for restenosis and the clinical follow-up is characterized by a higher incidence of death, myocardial infarction and reinterventions. Thus, diabetes itself and the frequent coexistence of other important risk factors label individuals with this disease as highly complex patients and represents a challenging problem in modern invasive cardiology. In recent years, drug-eluting stents (DES) are increasingly being used in diabetic patients. Several well designed trials investigated outcomes after DES implantation in diabetic patients. Consistently, RAVEL subset analysis, DIABETES trial, subset analysis from TAXUS II, IV, V and VI, and SIRIUS demonstrated the superiority of DES over BMS in reducing the need for target vessel revascularization without showing, however, a clear mortality benefit in diabetic patients within the examined follow-up period.

In addition to diabetes, small vessel size also presents a significant challenge; treatment of lesions in small coronary arteries is difficult and often disappointing with various interventional modalities. Revascularization by aorto-coronary bypass surgery (CABG) is technically difficult and is associated with high failure rates, while revascularization by plain balloon angioplasty and BMS is associated with high complication and restenosis rates. The major problem with small vessel size is their limited capacity to accommodate for late lumen loss after stenting, the extent of which is independent of vessel size. Thus, the superiority of DES over BMS shown in dedicated studies and subset analyses focused on small coronary vessels comes not unexpected.

Abundant evidence is thus available in support of the increased risk of restenosis associated with diabetes and small vessel size; both these factors may serve as a “stress test” helping the evaluation of the relative performance of coronary devices including DES.

The authors of the article that is published in this issue of REVISTA ESPAÑOLA DE CARDIOLOGÍA are to be commended for having combined both diabetes and small vessel size in their analysis creating a particularly high-risk scenario that is not unusual in the every-day practice of interventional cardiology. Patients with both these factors are those most in need of a treatment modality able to reduce effectively their inherently high risk of restenosis. For the first time we are provided with an analysis addressing interventions in a very small vessel size showing an average value of only 1.9 mm. To date, even dedicated studies on interventions in small vessels have reported average values of vessel size that were well above the 2 mm threshold. To realize the terrain on which Jiménez-Quevedo and colleagues have been operating, it is sufficient to consider that with a 1 mm late loss typical for BMS, more than half of their patients might have been at risk of restenosis if assigned to BMS. We are happily surprised to see an in-stent late lumen loss of 0.64 mm and an incidence of angiographic restenosis of 39.1% among BMS patients, although the BMS type they received has not the reputation of a “low-loss” stent. On the contrary, we are not surprised to see an irrelevant late lumen loss in the DES group of the study of Jiménez-Quevedo et al. In line with the described relationship between late lumen loss and restenosis, there was more than 75% risk reduction in angiographic and clinical restenosis with the use of this particular DES (sirolimus-eluting stent [SES]).

The data presented do not show an advantage in
ments in small vessels. There are little doubts about the benefit of pretreatment with clopidogrel loading in a 600 mg dose at best and, if this is timely done, glycoprotein IIb/IIIa inhibitors might not be needed in all situations. Abciximab has improved outcomes in patients with acute coronary syndromes, particularly if they present with positive cardiac biomarkers. In addition, it has reduced restenosis in diabetic patients receiving BMS, but it is still not known whether this beneficial effect is also observable in those receiving DES. Patients with diabetes mellitus and coronary artery disease require, independently of the PCI procedure, careful glycemic control and intensive management of all other risk factors including dyslipidemia, hypertension, smoking, and obesity. The role of the quality of glycemic control and the therapeutic options to achieve it are being tested as a standalone strategy or in combination with revascularization procedures (PCI or CABG) in a large randomized clinical trial including diabetic patients with coronary artery disease.

This subset analysis of the DIABETES trial clearly shows that we are currently approaching patients with a very high risk profile, a profile that only a few years ago would have been prohibitive for the majority of interventional cardiologists. This has been enabled by the availability of new effective DES technology. High-risk patients are those most in need of this technology and a friend in need is a friend indeed.

REFERENCES


