Letter to the Editor

Metabolic Syndrome Is a Poor Predictor of Outcome after Coronary Interventions in High-Risk Patients

To the Editor:

We read with interest the recent article by Dr. Kasai and colleagues (*1*) assessing the role of metabolic syndrome in the long-term outcome of patients with or without diabetes mellitus (DM) who underwent percutaneous coronary interventions (PCIs). They found that the risk of cardiac events is significantly increased in patients with metabolic syndrome (MS) at the time of PCI, irrespective of DM.

Metabolic syndrome is known to increase the angiographic extension of coronary disease (*2*) and to adversely affect prognosis (*3*). We agree with the authors that it is meaningful to assess MS because it may be a predictor of negative outcome after PCIs. However, in our opinion, the role of MS in post-PCI outcomes should be evaluated on the basis of global risk statistics.

A recent study (*4*) did not confirm an increased risk of 12-month restenosis and target lesion revascularization after implantation of bare-metal stents (BMS) or drug-eluting stents (DES) in low-risk patients with MS and without DM (no bifurcations, no diffuse disease, single-vessel intervention, stable clinical conditions).

Indeed, we prospectively assessed the angiographic and clinical outcomes in 66 consecutive patients who underwent PCI at our institution according to the presence of DM ($n=18$) or MS (with no DM) ($n=14$) or no DM and no MS (control group [CTRL], $n=34$). No specific exclusion criteria were adopted. Our patients had higher rates of previous myocardial infarction (66.3%) and had multiple target lesions (total=45%). We always performed PCIs with stent implantation (mean stent length 20.1±6.8 mm). At angiographic follow-up, we observed a significant difference in restenosis consistent with metabolic status: angiographic binary restenosis rate: 50% in MS; 39% in DM; 15% in CTRL ($p=0.02$). As expected, such angiographic behavior also translated into significantly increased need for repeat PCI in the long term (30±13 months) in patients with MS (39% in MS; 25% in DM; 13% in CTRL; $p=0.01$).

In conclusion, combining our data with those from Kasai *et al*. (*1*), it may be speculated that patients with MS have an increased risk of adverse cardiac events. In particular, patients with high-risk profiles may have poor prognoses after PCIs. It is important to correctly stratify patients with MS before coronary interventions in order to avoid the risk of adverse events.

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Response to: Metabolic Syndrome Is a Poor Predictor of Outcome after Coronary Interventions in High-Risk Patients; The Importance of Stratifying Patients with Metabolic Syndrome before Percutaneous Coronary Intervention

To the Editor:

We appreciate the comments on our paper by Dr. Tommasino *et al*. Considering the results of our study (*1*) and theirs, it appears that metabolic syndrome (MS)—irrespective of the presence or absence of diabetes mellitus (DM)—might be associated with an increased risk of cardiovascular morbidity and mortality following percutaneous coronary intervention (PCI). Given this association, we suggest that the pre-hypertensive or pre-diabetic status of MS may play an important role in the incidence of cardiovascular events.

In our study, like patients with both MS and DM, patients with MS alone showed a lower cumulative event-free survival rate than did patients with neither MS nor DM at >1 year after PCI. This might imply that patients with MS alone were progressing toward hypertension or DM during our study. Such progression might increase the incidence of cardiac events in patients with MS. Therefore, it was suggested that longer follow-up periods would allow for increased evidence of progression to hypertension or DM. Furthermore, this conditions were associated with poor long-term outcome. We consider reasonable the discrepancy between the results that

we and Tommasino *et al*. reported and those in other studies that showed no clinical significance of MS for target vessel revascularization (*2*, *3*). We attribute these conclusions to the difference in follow-up period.

Additionally, it is preferable to assess hard endpoints such as death and non-fatal acute coronary syndrome than to assess the occurrence of restenosis or target vessel revascularization. From this perspective, we believe that our data have clinical significance for the secondary prevention of coronary artery disease.

We agree with Tommasino *et al*. regarding the importance of stratifying patients with MS before PCI as a means of avoiding adverse cardiac events. Furthermore, their data and ours highlight the need to treat each MS component, even when the net impairment is mild.

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