showed that patients after catheter ablation profit from maintaining sinus rhythm in terms of mortality during a 5 year follow-up (92 vs. 64%). Additional information and data from larger cohorts are needed to proof the socio-economic benefit of catheter ablation in patients with atrial fibrillation.

Appropriate assessment of the ‘real’ AF burden is still one of the major challenges to reliably assess the outcome after interventional treatment. A close follow-up is required for patients who underwent catheter ablation for AF, facing the potential underestimation of AF burden in order to avoid premature therapeutical consequences especially regarding the risk of thrombo-embolic events.

References

Daniel Steven
Department of Electrophysiology
University Hospital Hamburg-Eppendorf
Heart Center
Hamburg
Germany

Email: d.steven@uke.uni-hamburg.de

Stephan Willems
Department of Electrophysiology
University Hospital Hamburg-Eppendorf
Heart Center
Hamburg
Germany

doi:10.1093/eurheartj/ehn311

A threshold of platelet reactivity for ischaemic events?

We read with great interest the paper from Price et al.1 The finding of a cut-off-value of platelet reactivity to predict ischaemic events in patients undergoing percutaneous coronary intervention (PCI) represents an important confirmation of previously published studies.2,3 We would like to address a few comments to the authors.

The loading regimen in both groups should be reported. In fact, describing the rate of patients receiving a 600 mg loading dose or under chronic clopidogrel therapy in each group (the high and low reactivity groups) is of critical interest. It is well known that the use of a 600 mg loading dose before PCI not only decreases the platelet reactivity but also improves clinical outcome.4,5 Therefore, a difference in the loading regimen between the two groups could represent a major confounder in the present study.

Why did the authors choose to report platelet reactivity result using PRU since the manufacturer instruction advice was to use the percentage of P2Y12 ADP receptor inhibition?

Finally, a limitation of the platelet reactivity assay tested in the present study (VerifyNow P2Y12) seems to be that it cannot be used during GP Iib/IIa inhibitors infusion which represents as much as 15% of the study population. This could also be a concern if this platelet assay was to be used routinely because these patients are those who have the higher risk of recurrent ischaemic events.

References
5. ARMYDA (Antiplatelet therapy for Reduction of Myocardial Damage during Angioplasty) study group. Prospective, multicenter, randomized, double blind trial investigating influence on PCI outcome of additional 600 mg clopidogrel load in patients on chronic therapy—ARMYDA-Relax. Presented at the ACC/SCAI meeting, Chicago, 2008.

Laurent Bonello
Departementen de cardiologie
Hospita universitaire nord
Chim des boursrely
Marseille 13015
France

Faculte de pahramcie
Unite INSERM UMRs 608
Marseille
France

Tel: +33 2022850348
Fax: +33 113349196/7989
Email: laurentbonello@yahoo.fr

Laurence Camoin-Jau
Laboratoire d’hematologie
hospital de la conception
Marseille
France

Faculte de pahramcie
The optimal threshold of high post-treatment platelet reactivity could be defined by a point-of-care VerifyNow P2Y12 assay

We read with great interest the study by Price et al.,1 which verifies that high post-treatment platelet reactivity (HPPR) measured with a point-of-care VerifyNow assay (Accumetrics Inc., San Diego, CA, USA) is associated with post-discharge events after percutaneous coronary intervention (PCI) with drug-eluting stent (DES), including stent thrombosis. To the best of our knowledge, this is the first study to identify a threshold of HPPR of VerifyNow based on the clinical outcomes.

Recently, a number of studies have demonstrated that clopidogrel non-responsiveness proven in the laboratory testing, i.e. HPPR, has been associated with an increased risk for cardiovascular events.2 Light transmittance aggregometry (LTA) is the gold standard test to determine the clopidogrel responsiveness. However, the abundant demands of LTA make it difficult to utilize in daily practice. VerifyNow was developed as a point-of-care test and showed a significant correlation with the results of LTA and VerifyNow using the same blood sample.3

In previous studies using LTA, platelet aggregation of >50% induced by 5 μM ADP or of >70% induced by 10 μM ADP5 has been suggested as an absolute threshold of HPPR for predicting the ischaemic outcomes. In the study of Price et al., the optimal cut-off for the combined endpoint was a post-treatment reactivity of 235 PRU (P2Y12 reactivity unit) (area under curve [AUC] 0.711, 95% confidence interval [CI] 0.529–0.893, P = 0.03). Because this study did not show the association between the HPPRs by a point-of-care test and ADP-induced LTA, we estimated the relation using our data. Three hundred consecutive patients undergoing PCI with DES implantation at our hospital were enrolled between October 2007 and March 2008. We performed 5 μM ADP-induced LTA and VerifyNow using the same blood sampling via the arterial sheath. LTA was performed in all patients according to standard protocols.4 Both PRU (r = 0.641, P < 0.001) and percentage platelet inhibition (r = 0.679, P < 0.001) measured by VerifyNow had significant correlations with the results of 5 μM ADP-induced platelet aggregation. By the receiver-operating characteristics curve analysis, the optimal cut-off for predicting HPPR on LTA (5 μM ADP-induced platelet aggregation >50%) was PRU > 239 (AUC 0.794, 95% CI 0.736–0.851, P < 0.001). The PRU value > 239 showed a sensitivity of 83.6% and a specificity of 68.3%, and was similar to the threshold of high reactivity value (PRU > 235), suggested by Price et al.1 The percentage platelet inhibition of ≤20 was the optimal cut-off for predicting HPPR on LTA (AUC 0.841, 95% CI 0.790–0.891, P < 0.001), which showed a sensitivity of 76.2% and a specificity of 83.6%.

A VerifyNow assay has been used widely in the daily practice instead of LTA. However, its usefulness for predicting adverse cardiovascular events has still been underdetermined. On the basis of our data analysis, we could ascertain that high platelet reactivity on VerifyNow (PRU > 235 suggested by Price et al.) is significantly correlated with HPPR on ADP-induced LTA. It might suggest a substitutability of VerifyNow in terms of assessment of clopidogrel responsiveness and practical implication for risk stratification. Funding to pay the Open Access publication charges for this article was provided by J.-Y. Hwang, the senior of the Cardiology Division.

References

Young-Hoon Jeong
Division of Cardiology
Department of Internal Medicine
Gyeongsang National University Hospital
Jinju 660-700
South Korea
Tel: +82 55 750 8065
Fax: +82 55 758 9122
Email: gooddoctor@naver.com

In-Suk Kim
Department of Laboratory Medicine
Gyeongsang National University Hospital
Jinju
South Korea

Bong-Ryong Choi
Division of Cardiology
Department of Internal Medicine
Gyeongsang National University Hospital
Jinju
South Korea

Choon Hwan Kwak
Division of Cardiology
Department of Internal Medicine
Gyeongsang National University Hospital
Jinju
South Korea

Jin-Yong Hwang
Division of Cardiology
Department of Internal Medicine
Gyeongsang National University Hospital
Jinju
South Korea

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author.