heterozygotes achieved levels of platelet reactivity similar to that seen with the standard 75 mg dose in non-carriers; in contrast, for *CYP2C19**2 homozygotes, doses as high as 300 mg daily did not result in comparable degrees of platelet inhibition.

Perspective

It is an established fact that those patients who have high platelet reactivity while on clopidogrel are at a higher risk of cardiovascular events including stent thrombosis. The reason for higher platelet reactivity includes importantly loss-of-function *CYP2C19* allele. This gene decides the rate of conversion of clopidogrel pro-drug to active form. Platelet function testing has raised a lot of hope that we might by tailoring the dose overcome this problem. However, major trials which involved platelet function testing and gene testing failed to show improvement in clinical end-points. The GRAVITAS trial failed to show improvement in clinical end-points. The TRIGGER-PCI was halted midway for the same reason. However, the final word whether platelet function testing is useful or not has not been said. Further trials like TARGET-PCI are likely to clarify the issue. Newer P2Y₁₂ inhibitors like prasugrel and ticagrelor by their more powerful action might make these tests redundant.

Compiled by

Dr. K. Sarat Chandra, Deepak Kumar Saha

Department of Cardiology,

Nizam's Institute of Medical Sciences,

Hyderabad, India.

1. Risk stratification in Brugada syndrome. Results of the PRELUDE (PRogrammed ELectrical stimulation preDICTive valuE) Registry.

Priori SG, Gasparini M, Napolitano C, et al.

J Am Coll Cardiol 2012;59:37–45.

doi: 10.1016/S0019-4832(12)60072-8

Study question: Would inducibility of sustained ventricular tachycardia/ventricular fibrillation (VTs/VF) by programmed electrical stimulation (PES) accurately predict arrhythmic events in asymptomatic Brugada syndrome patients?

Methods: This was a prospective Italian registry of 308 patients (80% men, median age 44 years) with a spontaneous or drug-induced type I Brugada electrocardiogram (ECG) and without history of cardiac arrest. The PES was performed at enrolment, and patients were followed up every 6 months.

Results: During a median follow-up of 34 months, 14 arrhythmic events (4.5%) occurred (13 appropriate implantable defibrillator shocks, and one resuscitated cardiac arrest). History of syncope and spontaneous type I ECG (hazard ratio [HR]: 4.20), ventricular refractory period ≤ 200 ms (HR: 3.91), and QRS fragmentation (HR: 4.94) were significant predictors

of arrhythmias. The PRELUDE was able to induce ventricular arrhythmias in 40% patients; however, arrhythmia inducibility was not a predictor of events at follow-up (9 of 14 events occurred in non-inducible patients).

Conclusion: Inducibility of VT/VF is unable to identify candidates for prophylactic implantable defibrillator therapy in Brugada syndrome patients who have not experienced arrhythmic events.

Perspective

In this PRELUDE registry, data of Brugada syndrome patients without previous arrhythmic events, rate of events during follow-up is much lower: 1.5%/year versus 4.1%/year previously reported (Brugada et al. Circulation 2003;108:3092–6). As is well-known, occurrence of Type I Brugada ECG pattern in combination with history of syncope was a strong predictor of arrhythmic events. New findings in this study are that a short ventricular effective refractory period ≤ 200 ms and fragmented QRS are independent risk indicators for life-threatening events. Programmed electrical stimulation, irrespective of the number of premature beats used, is not predictive of arrhythmic events.

2. Distinguishing 'benign' from 'malignant early repolarization': the value of the ST-segment morphology.

Rosso R, Glikson E, Belhassen B, et al.

Heart Rhythm 2012;9:225–9.

doi: 10.1016/S0019-4832(12)60073-X

Study question: Can the very common 'benign early repolarisation' be distinguished from the very rare but malignant form associated with idiopathic ventricular fibrillation (VF)?

Methods: This was a case control study of 45 idiopathic VF patients, 124 controls matched for age and sex, and 121 young athletes. Patients with J-point elevation on ECG were taken and their ST-segment morphology was graded as either 'horizontal' or 'scending'. ST-segment patterns were coded as 'concave/rapidly ascending' when there was ≥ 0.1 mV elevation of the ST-segment within 100 ms after the J-point or as 'horizontal/descending' when the ST-segment elevation was ≤ 0.1 mV within 100 ms after the J-point).

Results: J-waves were more prevalent among patients with idiopathic VF than among age- and sex-matched controls (42% vs 13%; $P \leq 0.001$) or among young athletes (42% vs 22%; $P \leq 0.013$). Of the 19 idiopathic VF patients with J-waves 13 (68.4%) had horizontal ST-segments; in contrast, only 4 (25%) of the 16 age-matched controls and 4 (14.3%) of the 28 young athletes with J-waves had a horizontal ST-segment.

Conclusion: The OR for having idiopathic VF for patients with J-waves was 4.0 (95% CI=2.0–7.9), but having J-waves and horizontal ST-segment has an odds ratio of 13.8 (95% CI=5.1–37.2). Despite the increased risk predicted by combination (of J-point elevation and horizontal ST-segment), using Bayes Theorem of conditional probabilities, estimated odds for developing idiopathic VF for an individual in the age