Unpredictability of Ventricular Arrhythmias in Takotsubo Syndrome: Echocardiography to the Rescue!

Ventricular arrhythmias (VA), that is, frequent ventricular premature complexes, monomorphic ventricular tachycardia, both nonsustained and sustained, torsades de pointes, ventricular fibrillation, and sudden cardiac death (SCD), are known to be frequent in patients with takotsubo syndrome (TTS), and are characterized by their unpredictability in regards to the timing of their occurrence during hospitalization.[1−6] Also, well known is the association of such VA with alterations of repolarization (negative T waves) and prolonged corrected QT-interval by the Bazzet formula (QTc), although VA are seen in patients with or without prolongation of the QTc. Since mortality is 'higher in patients with TTS, than without VA, electrocardiographic (ECG) telemetry monitoring for early detection of QTc prolongation and VA throughout hospitalization, and ECG recordings at follow-up has been recommended.[1−6] In addition better characterization of ECG and other correlates of the VA needs to be instituted for unraveling the mechanisms underlying VA in TTS.[7]

Congenital and acquired long QTc is also associated with VA and SCD, and a recent validation study of patients with the long QTc syndrome (LQTS)[8] found that the electromechanical window (EMW), calculated as the difference between the interval from the onset of the ECG QRS complexes to the aortic valve closure midline, as derived by the continuous wave Doppler echocardiogram, and the ECG-derived QT for the same beat, was *negative*, while it was *positive* in control subjects of similar age and gender distribution. Furthermore, the EMW was *more negative* in symptomatic that asymptomatic patients with the LQTS. In a ROC analysis, EMW *outperformed the QTc*, as an identifier of patients with previous life-threatening VA and SCD in the patients with LQTS.[8] In addition, the authors showed the feasibility/reproducibility of routine calculation of EMW by sonographers, after training. Consequently, the authors' institution adopted the routine reporting of EMW for their patients with LQTS, and the authors expressed the opinion that "future studies should examine the value of EMW in patients with other types of inherited arrhythmias and cardiomyopathies."[8]

EMW has been considered in the study/management of patients with coronary artery disease, mitral valve prolapse, and other cardiac diseases.[8] TTS shares the profile of LQTS as an "electrical disease" in association with cardiomyopathic features.[1−8] Accordingly, it is worth considering the adoption of the EMW in the management of patients with TTS during hospitalization. To this effect, clinicians and workers in the TTS field, should look carefully on the feasibility and usefulness of the echocardiography-derived EMW calculation for their patients and research subjects; it is conceivable that EMW may be a *better prognosticator* of VA in patients with TTS, than the currently exclusive focusing on a prolonged QT.

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Meta-Analysis Comparing Ticagrelor or Prasugrel Versus Clopidogrel in Patients Undergoing Elective Percutaneous Coronary Intervention

Ticagrelor and Prasugrel are more potent antiplatelet agents via their inhibition of P2Y12 receptors compared to clopidogrel, and they have become the mainstay of antiplatelet therapy in patients with acute coronary syndrome since Platelet Inhibition and Patient Outcomes (PLATO)[1] and Trial to Assess Improvement in Therapeutic Outcomes by Optimizing Platelet Inhibition with Prasugrel −Thrombolysis in Myocardial Infarction (TRITON−TIMI 38 TRITON −TIMI 38)[2] trials, respectively. However, their use has not been well established in patients with stable coronary artery disease undergoing elective percutaneous coronary intervention (PCI). The recently published ALPHEUS trial (Assessment of Loading With the P2Y12 Inhibitor Ticagrelor or Clopidogrel to Halt Ischemic Events in Patients Undergoing Elective Coronary Stenting)[3] failed to demonstrate Ticagrelor's superiority over Clopidogrel in reducing periprocedural myocardial infarction or major bleeding after elective PCI, with an increase in the rate of minor bleeding at 30 days.

The current meta-analysis aimed to compare the safety and efficacy of potent P2Y12 inhibitors (pP2Y12-I) versus clopidogrel in patients with coronary artery disease undergoing elective PCI. We searched electronic databases for randomized clinical trials