Sudden cardiac death (SCD) remains one of the major challenges of contemporary cardiology. Major clinical trials have demonstrated that primary prophylaxis of implantable cardioverter-defibrillators (ICD) is effective in saving lives when applied to patients with a reduced cardiac function. However, absolute mortality reduction with ICD therapy was not so high. Thus, primary ICD prophylaxis would subject a large group of patients to extend life in only a small population (i.e., costly strategy). Although left ventricular ejection fraction (LVEF) is a gold standard in risk stratification for SCD, some of electrocardiographic (ECG) techniques or measurements are also utilized in identifying high-risk groups. Various ECG indices that reflect repolarization, depolarization, or autonomic abnormalities have been used as risk stratification markers. Clinical evidence supports the usefulness of T-wave alternans (TWA), heart rate turbulence (HRT), heart rate variability (HRV), late potentials (LP) by signal-averaged electrocardiography, and so on. However, positive predictive values of these markers are low in identifying patients at risk for SCD.

At present, combined assessment of two or three noninvasive markers has been performed in clinical practice to increase predictive accuracy. In this session, we will overview current risk stratification techniques or measurements including standard, alternative, and new ECG markers for preventing SCD.

Keywords: sudden cardiac death, risk stratification