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Gene-based β-blocker therapy for long-QT syndrome type 2: comparison between Nadolol and Propranolol

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69 years old male with ischemic cardiomyopathy, diabetes mellitus type 2 [DMT2] and permanent atrial fibrillation [pAF] had a sudden cardiac arrest [SCA] in 2007 due to ventricular fibrillation [VF]. As prevention of subsequent episodes of the arrhythmia an implantable cardioverter-defibrillator [ICD] was implemented. Unfortunately, a disease course was further complicated by an adequate as well as inadequate ICD therapies treated successfully with increased dose of beta blocker. This medication resulted in slowing of atrioventricular conduction. Since that time the dominant ventricular rhythm was right ventricular pacing. The obvious effect of this was prolonged QRS duration (200 ms). Echocardiography revealed left ventricular ejection fraction (LVEF) decrease and the patient developed symptoms of heart failure New York Heart Association [NYHA] functional class III with seriously impaired quality of life. Upgrade from conventional ICD to cardiac resynchronization therapy [CRT] was implemented – patient underwent an implantation of pacing lead in His bundle area with selective capture and satisfactory pacing threshold. Procedure resulted in restoring of native QRS complexes which were narrow (118 ms), increase in LVEF (+7%) and improvement in NYHA class (for now on functional class I).

Biventricular pacing [BiV] is a well established method for CRT, although permanent His bundle pacing (pHBP) seems to be more physiologic way of pacing and as such it is promising alternative for BiV, either as a rescue strategy or as a first line treatment. Case of our patient shows that pHBP could be successfully used as primary strategy for CRT in patients with high percentage of ventricular pacing with both echocardiographic and clinical improvement. However, there is still a strong need for high quality randomized clinical trials to legitimate efficiency of pHBP in particular indications for CRT and establish its position.

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Nonlinear parameters of heart rate variability and detection of high risk patients after myocardial infarction based on artificial intelligence analysis

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Introduction: Implantable cardioverter-defibrillators (ICDs) have significantly improved the prognosis of patients with fatal arrhythmias. However, the quality of life (QOL) and psychological problems of ICD-patients with heart failure have not been sufficiently clarified.
Method: Consecutive ICD outpatients with underlying heart diseases in two centers were recruited (n = 148, mean age 63 ± 14 years, 83 % men). They completed a set of questionnaires consisting of Short Form-8 (SF-8) to asses health related QOL, Beck Depression Inventor (BDI) to assess depressive symptoms, Impact of Event Scale-Revised (IES-R) to assess post-traumatic stress disorder symptoms, State-Trait Anxiety Inventory (STAI), and Worries about ICD (WAICD). We divided these patients into 2 groups by the existence of organic heart diseases; one (HD-group) included 96 patients with ischemic heart disease (n=49) and cardiomyopathy (n=47) and another (non-HD-group) included 52 patients with Brugada (n=37), QT prolongation (n=6), and idiopathic (n=9).
Result: The mean ages of non-HD-group were significantly younger than those of HD-group (52.7 ± 15.9 vs. 65.1 ± 14.1 y, P <0.000). Left ventricular ejection fraction (LVEF) was lower in HD-group than non-HD-group (44.8 ± 17.7 vs. 67.9 ± 8.9 %, P <0.000). Comorbidity of diabetes mellitus and dyslipidemia were significantly higher in HD-group. Health-related QOL (physical QOL) and depressive symptoms score of BDI were worse in HD-group who had low heart function (45.6 ± 8.0 vs. 49.6 ± 6.9, P = 0.004 and 7.4 ± 8.6 vs. 4.4 ± 6.3, P = 0.028, respectively). Total score of WA-ICD and STAI were not significantly different between 2 groups.
Discussion: ICD patients with organic heart diseases had lower physical QOL and depressive symptoms due to aging, prolonged duration of illness, and lower cardiac function. We may consider different cares for the patients with /without organic heart diseases regarding physical QOL and depressive state.

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Comparison the Influences for Autonomic Tone between Cryo-balloon and Hot-balloon Ablation for Paroxysmal Atrial Fibrillation

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Transient receptor potential cation channel subfamily melastatin member 4 (TRPM4), a Ca2+-activated nonselective cation channel abundantly expressed in the heart. Recent studies suggest that TRPM4 plays an important role in some heart diseases. In this study, we developed a two-dimensional cardiac excitation model with a

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