

## **Possible favorable marker of positive head-up tilt and negative T-wave alternans during test in suspected high risk reflex syncope patients**

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T-wave alternans (TWA) is noninvasive index for predicting lethal arrhythmias and sudden cardiac death. Since syncope is the important warning sign for sudden cardiac, the measures of TWA in high risk patients with syncope give us useful information in clinical settings. Thus, we measured TWA during head-up tilt testing (HUT) by ambulatory ECG monitoring (AECG) in either exercise-induced syncope (EX-Group) or HUT-induced prolonged asystole (asystole>30 sec) previously named “malignant vasovagal syncope” (MLVVS-Group). Both of them are considered relatively high risk. Among consecutive 302 syncope patients who underwent HUT, followings were selected as study populations: 12 patients belong to EX-Group (22±5 years) with positive HUT results; 6 patients to MLVVS-Group (22±11 years) and another 9 patients with suspected reflex syncope with positive HUT results (C-Group; 21±8 years, as control). None of these three groups had structural heart disease. Patients in C-Group have similar clinical characteristics to EX-Group or MLVVS-Group. Although maximum T-wave alternans $\mu$ V obtained by AECG in MLVVS-Group and EX-Group tended to be larger than that of C-Group (28±13, 24±5 vs. 21±7 $\mu$ V), their differences were not significant. Long follow-up period (15.5±1.6 years) revealed that no lethal events occurred in any groups. Conclusions: Even if considerable high risk factors exist in the syncope patients, the favorable outcome would be expected if they present symptoms of reflex features with positive HUT results accompanying negative TWA (< 75  $\mu$ V) and no organic heart diseases.