T WAVE ALTERNANS IN OBSTRUCTIVE SLEEP APNEA

Chan AQ, Lua ER, Chan MP, Galito MA, Mandreza RY, Antonio N, Belen R, Fan XP. Chanwell Clinic, Stanford University Medical Center

Background: Positive microvolt T wave alternans (MTWA+) in the setting of left ventricular dysfunctions (EF < 40%) has been associated with a high incidence of malignant arrhythmia events such as ventricular tachycardia (VT) and ventricular fibrillation (VF). The correlation of MTWA+ and invasive electrophysiologic studies in predicting the occurrence of malignant ventricular arrhythmias is remarkably high. We examined the incidence of MTWA+ in obstructed sleep apnea (OSA) and to determine whether OSA patients may be at significant risk for malignant ventricular arrhythmias, thus increase risk for sudden cardiac death. **Methods**: 76 patients with OSA underwent echocardiogram, MTWA testing and coronary angiogram. MTWA results were classified as positive (MTWA+), negative (MTWA–) and intermediate (MTWAi). **Results**: 55 patients have coronary artery disease (CAD), 11 patients have systolic heart failure (SHF) ejection fraction <55% and 73 patients have diastolic heart failure (DHF). 14 patients were MTWA+, 65 patients were MTWA–, and 7 patients were MTWA intermediate.

Conclusions: There is a significant incidence of MTWA+ (18%) in OSA patients. Since MTWAi (9%) patients are also at higher risk for development of malignant ventricular arrhythmias, the overall predictive risk for OSA patients developing malignant ventricular arrhythmias and potential sudden cardiac death could be as high as 28%. OSA patients tend to have a high incidence of CAD (72%), and DHF (96%) and a relatively lower incidence of SHF (14%).