

SPIRONOLACTONE DECREASES MICROVOLT T–WAVE ALTERNANS AND VENTRICULAR EVENTS IN PATIENTS WITH CHF

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Aldosterone antagonists have demonstrated a statistically significant decrease in sudden cardiac death in patients with a decreased ejection fraction and congestive heart failure. Microvolt T–wave alternans (MTWA) is a sensitive and specific tool for identifying patients at risk of ventricular tachyarrhythmias. Furthermore, MTWA correlates with a suggested mechanism of ventricular reentry due to discordant repolarization. We hypothesized that aldosterone antagonists would directly affect myocardial vulnerability to ventricular arrhythmia and would result in a decrease in MTWA and arrhythmic events. We present our initial data of an ongoing single center self–controlled clinical trial.

Nine patients with a history of congestive heart failure, a documented left ventricular ejection fraction < 40%, and sustained (positive) MTWA were placed on spironolactone 25mg daily in addition to maximal medical therapy for heart failure. After 3 months of spironolactone therapy, 44% of these patients had a negative MTWA study. Arrhythmic events were noted to decline from a baseline incidence of 59% to 29% after 3 months of spironolactone to 0% after 6 months of spironolactone. The majority of these events were nonsustained ventricular tachycardia (NSVT). None of the 9 patients experienced hyperkalemia during the 6 months of spironolactone therapy.

In patients with LV dysfunction and congestive heart failure, spironolactone may play a role in reversing/decreasing sustained microvolt T–wave alternans. These changes may reflect a decreased propensity for ventricular arrhythmias and sudden cardiac death.