**Effect of Coenzyme Q10 administration in the incidence of atrial fibrillation among heart failure patients: The roles of antioxidant**

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**Introduction**: Heart Failure (HF) is associated with increased circulating inflammatory cytokines and high oxidative stress state. Several studies have shown inflammation as an independent risk factor for the initiation and maintenance of Atrial Fibrillation (AF). AF, a common coexisting cardiac problem in HF, is marked as a significant increased mortality risk factor. Coenzyme Q10 (CoQ10) is involved in free radical scavenging by reducing TNF, hs-CRP, and MDA. Decreasing of CoQ10 level in myocardial found among HF patients and correlated with the severity symptoms. Oral administration of CoQ10 is needed to obtain a positive clinical impact.

**Methods**: This study aimed to evaluate the effect of CoQ10 administration in the incident of AF and mortality outcomes among HF patients. We searched Pubmed database using the following keywords: Coenzyme Q10, CoQ10, Ubiquinone, Heart Failure, and Arrhythmia.

**Result**: Two good clinical studies met our inclusion criteria with total of 548 patients for analysis. Both studies showed a lower incidence of AF and good outcome in Coenzyme Q10 treatment group. Patients undertake CoQ10 were no significant differences to coexisted with Atrial Fibrillation [OR 0,51 (95% CI 0,15-1,77); p=0,29] but have lower mortality rates [OR 0,58 (95% CI 0,35-0,96); p=0,03].

**Conclusion**: These conclude that coenzyme Q10 could reduce the mortality rates among heart failure patient without significantly reduce the incidence of AF.