Prevalence of cardiac arrhythmia in hypothyroid and euthyroid patients.

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**Introduction**: Thyroid hormone acts as a regulator of cardiac function and rhythm through genomic and non-genomic actions of T3 on cardiac myocytes. Hypothyroidism is not considered as a risk factor for arrhythmia despite well-known ECG changes associated with this condition. This study was conducted to evaluate the difference, if any, in the prevalence of cardiac arrhythmia between hypothyroid patient and euthyroid patients.

**Methods**: One hundred consecutive patients attending the cardiac OPD of Holy Family Hospital with stable coronary artery disease were evaluated. Patients were divided into two groups depending on their thyroid status. Group 1 - Euthyroid, Group 2 - Hypothyroid patients. All patients were subjected to 72 hours of Holter monitoring and their arrhythmia burden recorded.

**Result**: There were 62 patients in the euthyroid group and 38 patients in the hypothyroid group. The two groups had no significant difference in baseline characteristic with respect to age, the prevalence of hypertension, DM, the extent of coronary artery disease. The mean age was 58.2 years and 57.3 years in the hypothyroid and euthyroid group respectively. Mean TSH level in hypothyroid patients group was 9.2 ml IU/L and the euthyroid group was 2.23 ml IU/L. There was a statistically high prevalence of ventricular arrhythmia in the hypothyroid group as compared to the euthyroid group (P=0.03).

**Conclusion**: Our study revealed the high prevalence of ventricular arrhythmia in patients with hypothyroidism. Increase in ventricular arrhythmia in the hypothyroid patient group, suggest that they require early detection of hypothyroidism and optimal medical treatment for hypothyroidism, to decrease arrhythmia burden. Further large scale studies are needed to better define the risk of such ventricular arrhythmia.