

# ASSOCIATION BETWEEN HSCRP LEVELS AND GLYCEMIC CONTROL WITH TOTAL INTERATRIAL CONDUCTION TIME IN TYPE 2 DIABETES MELLITUS PATIENTS

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## ABSTRACT

**BACKGROUND:** Type 2 Diabetes Mellitus (T2DM) represents one of the most important risk factors for atrial fibrillation (AF). Numerous studies have shown that T2DM and poor glycemic control reflected by glycated hemoglobin A1c (HbA1c) levels are independently associated with AF onset. Recent experimental studies reported that the increased susceptibility to AF in the diabetic patients was presumably due to the slowing conduction associated with increased interstitial fibrosis. Systemic inflammation can play role in the development of atrial fibrillation. High-sensitivity C-reactive protein (HsCRP) is an inflammatory biomarker that independently predicts the cardiovascular risk. This study aimed to analyze the association between HsCRP level, glycemic control, and total interatrial conduction time in T2DM patients.

**SUBJECT AND METHODS:** This was an analytic cross sectional study. A total of 41 patients with T2DM were evaluated. HsCRP and HbA1c were measured from peripheral venous blood samples taken from these patients. The total interatrial conduction time was measured by tissue Doppler echocardiography. Multiple regression analysis was use to analyzed the data.

**RESULTS:** The high-sensitivity C-reactive protein level was higher in the T2DM patients with HbA1c $\geq$ 7% ( $0.44\pm 0.30$ ) than in the T2DM patients with HbA1c $<$ 7% ( $0.32\pm 0.22$ ), although statistically non-significant ( $p=0.183$ ). The total atrial conduction time (milliseconds) was longer in the T2DM patients with HbA1c $\geq$ 7% ( $100.29\pm 28.53$ ) than in T2DM patients with HbA1c $<$ 7% ( $94.88\pm 16.50$ ), although statistically non-significant ( $p=0.449$ ). Multiple regression analysis showed that HsCRP level ( $b=38.78$ ; 95%CI=14.01 to 63.54;  $p=0.003$ ) and glycemic control ( $b=14.04$ ; 95%CI=0.09 to 27.98;  $p=0.048$ ) had positive association with total interatrial conduction time in T2DM patients.

**CONCLUSION:** HsCRP level and glycemic control had significant positive association with total interatrial conduction time in T2DM patients.

**Keywords:** HsCRP, glycemic control, HbA1c, total interatrial conduction time.