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## **ETJ006**

### **Influence of Subject Specific Factors on Myocardium Native Longitudinal Relaxation Time (T1) Values: A Retrospective Study**

Maheran Che Ha<sup>1,2</sup>, Izdihar Kamal<sup>2</sup>, Khairil Amir Sayuti<sup>3</sup>, Muhammad Khalis Abdul Karim<sup>2</sup>

<sup>1</sup>Jabatan Simpanan Latihan, Kementerian Kesihatan Malaysia, Malaysia

<sup>2</sup>Department of Physics, Faculty of Science, Universiti Putra Malaysia, Malaysia

<sup>3</sup>Department of Radiology, School of Medical Sciences, Universiti Sains Malaysia, Malaysia

Corresponding author: Izdihar Kamal

Email: [izdiharkamal@upm.edu.my](mailto:izdiharkamal@upm.edu.my)

**Introduction:** Native myocardial T1 is a sensitive biomarker in CMR that reflect tissue changes and can vary with biological factors. This retrospective study explores how subject-specific factors influence these values.

**Methods:** 60 CMR datasets acquired using 3.0 Tesla (3T) scanner were retrospectively analyzed. Using IntelliSpace Portal (ISP) software, the T1 measurement were performed based on American Heart Association (AHA) 17-segment model. Patient demographic data (e.g., age, gender, BSA), cardiac function parameters (e.g., LVEF, LVMI) and myocardial native T1 values were collected. Global and septal native T1 values were analyzed in relation to age, gender, LVEF and BMI. **Results:** Global T1 were higher in males than females (1303.10±55.86ms vs 1280.50±46.23ms), but not statistically significant (p=0.154). For septal T1 (female>male: 1290.62±64.95ms vs 1287.32±80.56ms, p=0.903). Global T1 showed a moderate negative correlation with LVEF (r = -0.59), and a moderate positive correlation with LVMI (r = 0.55), which stronger in female (r = -0.74 vs. r = -0.51, and r = 0.63 vs. r = 0.45, respectively). Septal T1 also correlated with global T1 (r = 0.53), LVMI (r=0.29), and showed a weaker negative correlation with LVEF (r = -0.36). **Conclusions:** Native myocardial T1 values are moderately influenced by heart function and muscle mass, with stronger association in females.

**Keywords:** myocardial T1 mapping, cardiac magnetic resonance (CMR), subject-specific factors, 3T MRI, Left ventricular function