中文題目：心房顫動為左心室收縮期縱向變形能力的主要決定因子

英文題目：Atrial fibrillation per se was a major determinant of global left ventricular longitudinal systolic strain

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Background: Atrial fibrillation (AF) may cause systolic abnormality via inadequate diastolic filling and tachycardia-induced cardiomyopathy. Global longitudinal strain (GLS) is a very sensitive method in detecting the subtle left ventricular (LV) systolic dysfunction. Hence, the aims of this study were to evaluate whether AF patients had a more impaired GLS, whether AF was a major determinant of GLS and determine the major correlates of GLS in AF patients.

Methods and Results: This study included 205 patients with persistent AF and 205 age and gender-matched non-AF patients. LV ejection fraction (LVEF), left atrial volume index (LAVI), LV mass index (LVMI) and GLS in AF patients were measured from index beat method. Compared to non-AF patients, AF patients had a more impaired LVEF and GLS and more increased transmitral E wave velocity (E), early diastolic mitral velocity (Ea) and LAVI (all $p < 0.001$) , but comparable E/Ea. After adjustment for baseline characteristics, LAVI, LV chamber size and LV systolic and diastolic parameters, AF per se was still a major determinant of GLS in all patients ($\beta = 0.526$, $p < 0.001$). Besides, rapid heart rate, decreased E, Ea and LVEF and increased LVMI ($p < 0.007$) were important determinants of reduced GLS in our AF patients.

Conclusions: This study demonstrated AF patients had a more impaired GLS. AF was a major determinant of GLS after adjustment for baseline and echocardiographic characteristics. Furthermore, in addition to heart rate and LV systolic and diastolic function, LVMI was also an important determinant of GLS in AF patients.