

中文題目：心房早期收縮負載與動脈硬化增加之相關性研究

英文題目：THE LOADS OF PREMATURE ATRIAL CONTRACTION IS ASSOCIATED WITH INCREASED AORTIC STIFFNESS

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摘要

前言：心房顫動 (Atrial fibrillation) 會導致嚴重之心、腦血管疾病。已有研究顯示心房早期收縮是心房顫動之前驅物 (Precursor)。而血管粥狀硬化又與心房顫動相關。因此本研究將探討心房早期收縮負載(Load)與動脈硬化之關聯性。

材料及方法：我們收集了 140 位因心悸安排 24 小時連續心電圖檢查之病人(67 男性；平均年紀 34 ± 10)。年紀大於 50 歲、已有心、腦血管疾病、有慢性心房顫動者排除。動脈硬化是用標準之 applanation tonometry 量測。增大值(Augmentation)及增大值指數 (Augmentation index)均由標準之 applanation tonometry 獲得。增大值及增大值指數愈高代表血管硬化愈嚴重。心房早期收縮負載之增加定義為每天之心房早期收縮數大於 24 下。

結果：17 位病患(12%;平均年紀 37 ± 10)有心房早期收縮負載之增加。增大值(6.9 ± 6.1 mmHg vs. 3.4 ± 4.7 mmHg, $p = 0.022$) 及 增大值指數 (20.7 ± 17.9 vs. 11.6 ± 14.6 , $p = 0.006$)在有心房早期收縮負載增加之病患族群明顯較無心房早期收縮負載增加之病患族群為高。年紀、性別、及心血管疾病危險因子則無顯著差異。經多變數分析發現，只有增大值指數($p = 0.008$, OR 1.14, 95% C.I. 1.04~1.26) 是有無心房早期收縮負載

增加之獨立相關因子。

結論：動脈硬化與心房早期收縮負載增加是相關的。動脈粥狀硬化可能是心房顫動發生

之重要相關因子。

THE LOADS OF PREMATURE ATRIAL CONTRACTION IS ASSOCIATED WITH INCREASED AORTIC STIFFNESS

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Objectives: Atrial fibrillation (AF) carries major cardiovascular and cerebrovascular risks. Previous studies demonstrated that premature atrial contraction (PAC) loads could be the precursor of AF. Atherosclerosis was also noted to be associated with AF. This study was undertaken to elucidate the relation between PAC loads and aortic stiffness.

Methods: We enrolled 140 consecutive patients (67 male, mean age 34 ± 10 years) who received ambulatory electrocardiography (ECG) examination for the cause of palpitation. Patients older than 50 years, with vascular diseases, or with chronic atrial fibrillation were excluded. Aortic stiffness was measured by applanation tonometry from right radial artery and transformation to central aortic pressure wave form (AtCor Medical, Australia). Augmentation (AG) represents difference between the second and first systolic peaks of the central pressure waveform. Augmentation index (AIx) is defined as augmentation expressed as a percentage of pulse pressure. Increased PAC load was defined as more than 24 beats of PAC per day detected by ambulatory ECG.

Results: There were 17 patients (12%; age 37 ± 10 years) had increased PAC loads. AG (6.9 ± 6.1 mmHg vs. 3.4 ± 4.7 mmHg, $p = 0.022$) and AIx (20.7 ± 17.9 vs. 11.6 ± 14.6 , $p = 0.006$) were significant higher in patients with increased PAC loads. There were no differences in age, sex, and risk factors between patients with or without increased PAC loads. After multivariate analysis adjusted by age and blood pressure, AIx ($p = 0.008$, OR 1.14, 95% C.I. 1.04~1.26) was an independent factor associated with PAC loads.

Conclusion: Increased aortic stiffness was associated with increased PAC loads. Atherosclerosis of large artery might be an important factor for the development of AF.

