• 系統編號	RC8804-0246
• 計畫中文名稱	左心室肥大之電腦心電圖診斷研究
• 計畫英文名稱	Aspects of Computer ECG Diagnosis of Left Ventricular Hypertrophy
• 主管機關	行政院國家科學委員會
• 計畫編號	NSC87-2314-B038-045-M08
• 執行機構	台北醫學院醫學研究所
• 本期期間	8608 ~ 8707
• 報告頁數	0 頁
• 使用語言	英文
• 研究人員	楊騰芳 Yang, Ten-Fang
• 中文關鍵字	心電圖；左心室肥大；轉換向量心電圖；心臟超音波檢查；左心室質量指數
• 英文關鍵字	Electrocardiography (ECG)；Left ventricular hypertrophy；Derived vectorcardiography；Echocardiography；Left ventricular mass index
• 中文摘要	由主持人與英國 GLASGOW 大學 Prof. Macfarlane 的合作研究顯示出中國人及西方人心電圖,轉換向量心電圖的一些數據在統計學上有意義的差異。而這些研究是以正常 1555 西洋人及 503 中國人的研究。同時也發現正常人年紀及性別亦對心電圖的正常值有所影響。因此可以推論在心電圖之左心室肥大之診斷亦會在種族上有所差異。故本研究之目的乃在證明診斷西方人左心室肥大之心電圖準則對中國人之左心室大的診斷之適用性。 本研究之數據及病患資料均是主持人在台北醫學院附設醫院心臟內科門診由 1997 年 10 月到 1998 年 5 月爲止,因高血壓來求診之病例,共有 200 例。而所有的病例均有詳細病史、胸部 X 光、心電圖及心臟超音波檢查。經過篩選後共有 80 例合乎左心室肥大之診斷規則(心臟超音波檢查 M-MODE 左心室質量指數(LVMI)在男性>132g/sqm,在女性>100g/sqm 即判定超音波之左心室肥大診斷)。而本研究中計算左心室質量公式例使用 Devereux 及 Reichek 在 1997 年報告的方法。測量時是使用 Penn Convention。而正常人之數據是由國立台灣科技大學教職員及學生共 122 例。所有正常人皆有正常的病例史及物理檢查、胸部 X 光。而用來檢驗的西方人心電圖左心室肥大的診斷規則如下:(1)RV5 OR RV6>2.6mV;(2)SOKOLOW-LYON INDEX:SV1+RV5 OR RV6>3.5mV;(3)CORNELL VOLTAGE(CV):CV3+RaVL>2.8mV(men),SV3+RaVL>2.2mV(women),Cornell product=CV*QRS duration>2436mV ms;(4)Romhilt-Estes Point SCORES>4; (5)GLASGOW PROGRAM LVH Criteria。 由本研究可知診斷規則 Romhilt-Estes Point Scores 具有最佳的心電圖左心室肥大檢出率,但也略犧牲了診斷正常人爲左心室肥大的 Specificity。經由本研究可知西洋人心電圖診斷左心室肥大之準則在中國人並不適用。因此有重新收集更多病例以再建立合適於中國人的心電圖診斷規則。
• 英文摘要	From the previous several cooperative studies by this author and Professor Macfarlane at the University of Glasgow had revealed there were

statistically significant differences of the 12-lead ECG and derived VCG parameters between Chinese and Caucasians, these research were based on the study on 1555 Caucasians and 503 Chinese. At the same time, the impact of age and sex on the ECG parameters of normal subjects were also found. Therefore, it is thought that there should be racial variation in the left ventricular hypertrophy diagnostic ECG criteria. The purpose of the present research is to evaluate the accuracy of the application of the Caucasian ECG left ventricular hypertrophy diagnostic criteria in Chinese. The database and materials of the patients in the present research was collected from the author's cardiology out patient clinic at Taipei Medical College Hospital. They were dated from October 1997 to May 1998. All 200 patients visited the clinic because of the high blood pressure. All cases had detailed medical history, chest X-ray, 12-lead ECG and Echocardiographic examination. After careful screening for the echocardiographically determined left ventricular hypertrophy, there were only 80 cases selected for the present study. The M-mode Echocardiographic diagnostic criteria used for the diagnosis of left ventricular hypertrophy is left ventricular mass index >132g/sqm in men and >100g/sqm in women. The formula adopted to calculate the left ventricular mass is reported by Devereux and Reichek in 1997. Penn convention was used in the present study for the measurement of boundary on the M-mode echocardiogram. The normal data used in the present study was collected from the students and the teaching staff of the National Taiwan University of Technology and Science. All normal subjects had normal medical history, physical examination and chest X-ray. Siemens Megacart latest version ECG recording machine was used in the present study. The ECG were recorded according to the ACC/AHA recommendations. The Caucasian ECG diagnostic criteria for left ventricular hypertrophy are as follow: (1) RV5 OR RV6>2.6mV; (2) SOKOLOW-LYON INDEX: SV1+RV5 OR RV6>3.5mV; (3) CORNELL VOLTAGE (CV): SV3+RaVL>2.8mV (men), SV3+RaVL>2.2mV (women), Cornell Product=CV*QRS duration>2436mV mS; (4) Romhilt-Estes Point SCORES>4; (5) GLASGOW PROGRAM LVH Criteria. Romhilt-Estes Point Scores ECG left ventricular hypertrophy diagnostic criteria has the best screening rate, whereas this criteria also sacrifice the specificity in normal subjects. From the present study, it is known that the Caucasian left ventricular hypertrophy ECG diagnostic criteria should be revised if it is applied on the Chinese population. Thus it is thought to collect more materials in the near future for establish the newly revised criteria for diagnosing ECG left ventricular hypertrophy in Taiwan.