不同血壓應激反應定義方式與壓力測試受試者主觀感受、壓力感受器敏感度與動態血壓之相關性

The relationship among various definitions of pressor reactivity, baroreceptor sensitivity, ambulatory blood pressure and subjective perception of the stress tasks

中文摘要

研究目的爲探討不同血壓應激反應定義方式與壓力測試受試主觀感受、壓力感受器敏感度與動態血壓之相關性。

研究方法：本研究個案爲 56 位前期及輕度高血壓患者。本研究採用非侵入性血液動力測量儀器(Finometer, FMS, Netherlands)連續監測壓力測試過程血壓及心跳變化，並依照四種不同操作型定義（最大血壓應激反應、平均血壓應激反應、曲線下面積血壓應激反應及血壓恢復程度）計算血壓應激反應值，及利用 PRVBRS 軟體計算壓力感受器反射敏感度；利用動態血壓測量儀(Model 90217, SpaceLabsTM Inc., Redmond, WA, USA)，測量二十四小時動態血壓。

研究結果：1.控制年齡、臨床心跳值及身體質量指數後，壓力測試期之壓力感受器敏感度愈差者其平均收縮壓及舒張壓之血壓應激反應愈大（$r = -0.34$, $r = -0.29$; $p = .01$, $p = .04$），曲線下面積收縮壓及舒張壓之應激反應也愈大（$r = -0.38$, $r = -0.31$; $p = <.01$, $p = .02$）。2.壓力測試過程厭煩程度愈高者其曲線下面積之收縮壓反應程度愈低（$r = -0.33$; $p = .017$），愈感到盡力者其收縮壓恢復程度愈差（$r = 0.28$; $p = .044$）。3.最大收縮壓反應程度愈大者其 24 小時收縮壓及舒張壓平均值之標準差愈小（$r = -0.32$, $r = -0.01$; $p = .02$, $p = .01$）。

本研究結論爲前期及輕度高血壓族群，較高的血壓應激反應（平均及面積下血壓應激反應）可反應於較差的壓力感受器敏感度；厭煩及盡力之主觀感受會影響血壓應激反應程度，此結果可做爲探討血壓應激反應機轉的知識基礎，及提供相關研究選擇壓力源之參考。

英文摘要

The purpose of this study was to examine the relationship among various definitions of pressor reactivity, baroreceptor sensitivity (BRS), ambulatory blood pressure and subjective perception of the stress tasks

Methods: This study included 56 subjects with prehypertension and stage 1 hypertensives. Blood pressure reactivity to the stress tasks were measured using a noninvasive hemodynamic monitoring system (Finometer, FMS, Netherlands) continuously throughout the whole stress session. Then to calculate blood pressure reactivity (BPR) by various definitions, such as maximum BPR, average BPR, area under the curve and blood pressure recovery. And using the software (PRVBRS) to analysis BRS. The Ambulatory BP measurement was performed over a 24-hour period using an automatic BP recorder (Model 90217, SpaceLabsTM Inc., Redmond, WA, USA).

The major findings of this study were as followed: 1) After controlling age, clinical

heart rate and body mass index, the inferior BRS with elevated average and area under the curve (AUC) systolic blood pressure (SBP) reactivity (r = -0.34, r = -0.29; p = .01, p = .04) and diatonic blood pressure (DBP) reactivity (r = -0.38, r = -0.31; p = <.01, p = .02). 2) The subjects were tired during the stress tasks and the AUC SBP reactivity decrease (r = -0.33; p = .017). The subjects do efforts, the SBP recover poorly (r = 0.28; p = .044). 3) The subjects with higher maximum SBP reactivity and the standard deviation (SD) of SBP and DBP to 24 hours in daily life were smaller (r = -0.32, r = -0.01; p = .02, p = .01)。

The conclusions of this study was in prehypertension and stage 1 hypertensives, exaggerated blood pressure reactivity in average and AUC definitions was related with inferior BRS. Subjective perceptions of the stress tasks affect blood pressure reactivity. These results are basis knowledge to understand the mechanism of blood pressure reactivity and select the pressor tasks.