

Family history of hypertension is associated with exaggerated cardiovascular reactivity to mental, but not to physical test

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Abstrak

Tujuan Membandingkan reaktivitas kardiovaskular terhadap tes mental dan fisik antara subjek normotensif dengan riwayat keluarga hipertensi dan subjek normotensif tanpa riwayat keluarga hipertensi. Metode Mahasiswa normotensif dengan (n=40) dan tanpa (n=40) orangtua hipertensi melakukan tes aritmatika dan cold pressor. Kedua tes tersebut terdiri dari fase istirahat pra-tes, fase tes, dan fase istirahat pascates. Parameter kardiovaskular diukur pada tiap fase dengan menggunakan alat pengukur tekanan darah osilometrik otomatis. Data di analisis dengan tes t atau Mann-Whittney. Reaktivitas kardiovaskular diketahui berdasarkan selisih nilai fase tes dengan fase pra-tes. Hasil Kedua kelompok tidak berbeda bermakna dalam usia, indeks masa tubuh, kadar gula darah puasa, dan kadar kreatinin plasma. Subjek normotensif dengan orangtua hipertensi menunjukkan tekanan darah sistolik istirahat (108,33+1,6 vs 103,00+1,6 mmHg) serta hipereaktivitas kardiovaskular (MABP 19,13+1,4 vs 15,5+1,0 mmHg, P= 0,04), yang lebih tinggi secara bermakna terhadap tes mental namun tidak terhadap tes fisik (MABP 24,26+1,7 vs 21,74+1,7 mmHg) dibandingkan dengan subjek normotensif tanpa orangtua hipertensi. Kesimpulan Subjek normotensi dengan riwayat keluarga hipertensi mempunyai hipereaktivitas kardiovaskular terhadap tes mental namun tidak terhadap tes fisik dibandingkan dengan subjek normotensi tanpa riwayat keluarga hipertensi. Akan tetapi, belum jelas apakah riwayat keluarga hipertensi atau tekanan darah sistolik istirahat yang berhubungan dengan hipereaktivitas kardiovaskular terhadap tes mental.

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Abstract

Aim To investigate whether normotensive young adults with family history of hypertension demonstrate exaggerated cardiovascular responses to both mental and physical stimuli as compared to normotensive young adults without family history of hypertension. Methods Normotensive undergraduate students of normotensive parents (n = 40) and of hypertensive father/ mother/both (n = 40), aged 20 ? 30 years, performed serial subtraction test in a sitting position for three minutes. After taking a rest, subjects performed cold pressor test in ninety seconds. In each test, blood pressure and pulse rate were recorded in pre-test, during test, and post-test using an automated oscillometric device. Changes score rather than absolute scores were analyzed using independent t-test or Mann-Whitney. Results There were no significantly differences in age, body mass index, fasting blood sugar, and plasma creatinine between the two groups. Normotensives of hypertensive parents had significantly higher office systolic blood pressure (108.33+1.6 vs 103.00+1.6 mmHg) and delta change score of cardiovascular reactivity to serial subtraction test (MABP 19.13+1.4 vs 15.5+1.0 mmHg, P= 0.04), but not to cold pressor test (MABP 24.26+1.7 vs 21.74+1.7 mmHg) than those of normotensive parents. Conclusion Normotensive young adults with family history of hypertension demonstrated exaggerated cardiovascular reactivity to mental test but not to physical test. As compared to normotensive young adults without family history of hypertension However, this familial difference in cardiovascular reactivity to mental test is confused with office blood pressure.