Perbandingan efek lisinopril dan amlodipin terhadap kekakuan pembuluh arteri pada pasien hipertensi yang belum pernah diobati = aortic stiffness in native hypertension amlodipin versus lisinopril administration ashalina study

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Abstrak

[ABSTRAK
Latar belakang. Hipertensi adalah faktor risiko kardiovaskular yang penting. Kekakuan arteri meningkat seiring dengan peningkatan usia, hipertensi, diabetes mellitus, aterosklerosis, dan lainnya. Kekakuan arteri dapat diukur secara non-invasif dengan menggunakan alat carotid-femoral pulse wave velocity (CF-PWV), dimana alat ini mengukur kecepatan gelombang nadi yang berjalan dari arteri karotis komunis ke arteri femoralis. Obat antihipertensi telah diketahui memiliki kemampuan terhadap kekakuan arteri, namun berbeda efektifitasnya.
Tujuan. Melihat perbandingan efek pemberian penghambat enzim pengubah angiotensin dan penyekat kanal kalsium terhadap kekakuan arteri pada pasien hipertensi yang belum pernah diobati sebelumnya.
Metode. Uji klinis acak dengan tersamar ganda, dilakukan di RS Pusat Jantung dan Pembuluh Darah Harapan Kita (Maret-Mei 2015) terhadap 54 subyek usia 30-50 tahun. Subyek dibagi menjadi dua grup, grup lisinopril (n=27) dan amlodipin (n=27). Tekanan darah dan CF-PWV diukur sebelum dan setelah intervensi.
Hasil. Terdapat penurunan tekanan darah dan sesudah terapi untuk kedua grup. Delta penurunan CF-PWV untuk kedua intervensi menujukkan hasil yang signifikan (P value <0.001). Lisinopril memiliki penurunan delta CF-PWV yang lebih signifikan dibandingkan amlodipin. (P value <0.001 IK 95% 0.2 - 0.5).
Kesimpulan. Penelitian ini membuktikan adanya perbedaan bermakna terhadap CF-PWV pada grup yang diberikan lisinopril dan amlodipin, dimana lisinopril memiliki delta penurunan PWV yang lebih signifikan.
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ABSTRACT
Background. Hypertension is a well-recognized cardiovascular risk factors. Arterial stiffness increases with age, hypertension, diabetes mellitus, atherosclerosis, etc. Arterial stiffness can be assessed noninvasively by carotid-femoral pulse wave velocity (CF-PWV) measurement, that is, the velocity of the pulse wave to travel a given distance between carotid and femoral artery. Antihypertensive drugs have been implicated in arterial stiffness diminishment but vary in effectiveness.
Objective. To examine the difference in arterial stiffness reduction in young native hypertensive subjects that was given ace-inhibitor or calcium channel blocker.
Methods. A double blind randomized clinical trial was conducted in National Cardiovascular Centre Harapan Kita to 54 subjects (30-50 years old), from March to May 2015. Subjects were divided into lisinopril 5mg (n=27) and amlodipine 5mg (n=27) groups. Blood pressure and CF-PWV were measured before and 4 weeks post therapy.
Results. Blood pressure reduction was found before and after treatment for both groups. CF-PWV for lisinopril and amlodipine showed significant reduction (p-value <0.001). Lisinopril had more significant

decrease in CF-PWV (P value <0.001 CI 95% 0.2 - 0.5).
Conclusion. There was a statistically significant difference in CF-PWV reduction between lisinopril and amlodipin administration to patients with native hypertension, with lisinopril having the larger effect.,
Background. Hypertension is a well-recognized cardiovascular risk factors.
Arterial stiffness increases with age
subjects with diabetes mellitus,

and hypertension

and is also enhanced in
atherosclerosis,

and end-stage renal disease.

Arterial stiffness can be assessed noninvasively with the use of carotid-femoral pulse wave velocity (CF-PWV) measurement, that is, the velocity of the pulse wave to travel a given distance between carotid and femoral artery.
Antihypertensive drugs have been implicated in arterial stiffness diminishment but vary in their degree of effect. The calcium channel blocker having its "destiffening" effect have been widely known to reduce arterial stiffness. However, the renin-angiotensin system inhibitors proved to be superior to all other antihypertensive drugs in reducing arterial stiffness.
Objective. The aim of this study was to examine the difference in arterial stiffness reduction in native hypertensive subjects that was given ace-inhibitor or calcium channel blocker for four weeks, by measuring the CF-PWV.
Methods. A double blind randomized clinical trial was conducted in National Cardiovascular Centre Harapan Kita (NCCHK) to 54 subjects with native hypertension between the age of 30-50 years old, from March to May 2015. Subjects were divided into two groups: lisinopril 5mg (n=27) and amlodipine 5mg (n=27). Blood pressure and CF-PWV were measured before and after 4 weeks of therapy. Statistical analysis was done using bivariat and multivariat analisis to determine the significance of arterial stiffness reduction.
Results. There was a reduction in blood pressure (systole, diastole, mean arterial pressure) before and after the treatment for both groups. However although it was clinicaly significant, statistically it was not (P value >0.05). Nonetheless, CFPWV
for
lisinopril
and
amlodipin
showed
significant

reduction
with
both
p-value

were

<0.001 (2.09±0.280, CI 95% 1.80-2.2 and 1.77±0.340, CI 95% 1.6-1.9).
When both drugs were compared using multivariate analysis, lisinopril was
proved to have a more significant decrease in CF-PWV (P value <0.001 CI 95%
0.2 - 0.5).
Conclusion. This study proved that there was a statistically significant difference
in CF-PWV reduction between lisinopril and amlodipin administration to patients with native hypertension, with lisinopril having the larger effect.]