

# Perbandingan efektifitas antara lisinopril dan amlodipin terhadap penurunan tekanan darah pada pasien hipertensi ras melanesia = Effectiveness comparison between lisinopril and amlodipine in melanesian patients with hypertension

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## Abstrak

Latar Belakang : Keberhasilan pengobatan antihipertensi dipengaruhi banyak hal, salah satunya adalah faktor genetik, termasuk perbedaan ras dan aktivitas renin plasma (ARP). Perbedaan ras, berkaitan dengan ARP, mungkin dapat memberikan perbedaan respon terhadap obat antihipertensi. Aktivitas renin plasma dan perbandingan efektifitas obat antihipertensi (lisinopril dan amlodipin) pada ras melanesia di Provinsi Papua belum pernah diteliti.

Tujuan : Mengukur aktivitas renin plasma dan membandingkan efektifitas obat lisinopril dan amlodipin pada pasien hipertensi ras melanesia untuk menurunkan tekanan darah.

Metode : Pada awal penelitian, 68 subjek berhasil direkrut, dilakukan randomisasi dan dibagi ke dalam dua kelompok. Sebanyak 34 subjek mendapat lisinopril 5 mg dan 34 subjek mendapat amlodipine 2.5 mg.

Tekanan darah, ARP dan karakteristik dasar lainnya diukur sebelum intervensi, dan kemudian di follow up tiap minggu. Subjek yang belum mencapai target tekanan darah akan diberikan peningkatan dosis obat, lisinopril 10 hingga 20 mg dan amlodipin 5 hingga 10 mg. Pada akhir penelitian (minggu keempat), tekanan darah diukur sebagai luaran klinis. Sebanyak 7 subjek drop out, 4 subjek pada kelompok lisinopril dan 3 subjek pada kelompok amlodipin.

Hasil : Aktivitas renin plasma pada populasi penelitian ini 1.6 ng/ml/jam (normal). Karakteristik dasar klinis tidak berbeda antara kedua kelompok, termasuk rerata tekanan darah sebelum intervensi dan ARP. Pada kedua kelompok didapatkan penurunan tekanan darah yang signifikan setelah intervensi, baik pada tekanan darah sistolik (TDS), distolik (TDD) dan tekanan nadi (TN). Namun, pada penelitian ini, perbedaan respon penurunan tekanan darah antara kelompok lisinopril dan amlodipin tidak berbeda (TDS  $24.6 \pm 9.3$  vs  $25.9 \pm 8.9$  mmHg,  $p=0.56$ ; TDD  $13.3 \pm 5.5$  vs  $11.4 \pm 4.8$  mmHg,  $p=0.15$ ; TN  $17.1 \pm 5.6$  vs  $16.3 \pm 5.0$  mmHg,  $p=0.55$ ).

Kesimpulan : Aktivitas renin plasma pada pasien hipertensi ras melanesia normal dan pemberian lisinopril tidak menunjukkan perbedaan penurunan respon penurunan tekanan darah dibandingkan dengan amlodipin.

.....Background: The success of antihypertensive treatment are influenced by many factors, one of which are genetic factors, including differences in race and plasma renin activity (PRA). Racial differences, regarding PRA, may give different response to antihypertensive drugs. Plasma renin activity and comparison of the effectiveness of antihypertensive medications (lisinopril and amlodipine) in the Melanesian race in the province of Papua have not been investigated.

Objectives: To measure plasma renin activity and compare the effectiveness of lisinopril and amlodipine in melanesian hypertensive patients to reduce blood pressure.

Methods: Sixty eight subjects were randomly assigned into 2 groups, those receiving lisinopril 5 mg (34 subjects) and amlodipine 2.5 mg (34 subjects). Blood pressure, PRA and other baseline characteristics were measured before the intervention, and then evaluated every week. Dose of lisinopril and amlodipine will be

increased in subjects who have not achieved blood pressure target, 10 mg to 20 mg and 5 mg to 10 mg, respectively. At the end of the fourth week, blood pressure is measured as the main clinical outcome. Seven subjects were drop out, four from lisinopril group and three from amlodipin group.

Results: Plasma renin activity in this study population was 1.6 ng/ml/h (normal). Baseline characteristics did not differ between two groups, including blood pressure and PRA before intervention. Significant decrease in blood pressure occurred in both group after the intervention, including systolic blood pressure (SBP) , diastolic (DBP) and mean arterial pressure (MAP). However, there are no differences in blood pressure reduction between lisinopril and amlodipine groups. (SBP  $24.6 \pm 9.3$  vs  $25.9 \pm 8.9$  mmHg,  $p=0.56$ ; DBP  $13.3 \pm 5.5$  vs  $11.4 \pm 4.8$  mmHg,  $p=0.15$ ; MAP  $17.1 \pm 5.6$  vs  $16.3 \pm 5.0$  mmHg,  $p=0.55$ ).

Conclusion: Plasma renin activity in melanesian hypertensive patients was normal and administration of lisinopril showed no difference in blood pressure reduction compared with amlodipine.