Amlodipine and Enalapril in Coronary Disease

Eduardo Maffini da Rosa, Carolina Fedrizzi el Andari, Marcio Fernando Spagnól
Universidade de Caxias do Sul, Caxias do Sul, RS – Brazil

Regarding the study "Combination of Amlodipine and Enalapril in Hypertensive Patients with Coronary Disease"[1], our group of research understands that the use of fixed associations, as the ones presented in this study, brings several advantages, especially regarding the good patient adherence when taking the medication and the possibility of using two drugs at smaller final doses to attain the control of arterial pressure, which must result in a higher adherence to treatment[2], and, consequently, in better therapeutic results[3].

However, there are situations, such as in ischemic cardiopathy and diabetes mellitus, in which the "therapeutic space" corresponding to the arterial pressure must be used to attain the ideal dose of certain drugs before hypotension occurs[4].

In the present case, to use higher doses of second-generation calcium channel blockers can be interesting to control angina, in case of ischemic cardiopathy, as well as the use of angiotensin-converting enzyme inhibitors for the secondary prevention of nephropathy. However, these are situations in which the association of other drugs can be troublesome.

Another important fact, from our point of view, is that the drugs that are involved in the association must have a similar half-life, so that the antihypertensive coverage is the same throughout the 24 hours of the day, with both drugs[5].

Key words

Hypertension; coronary disease; enalaprilat; angiotensin-converting enzyme inhibitors.

References

1. Rienzo M, Saraiva JFK, Nogueira PR, Gomes EPSG, Moretti MA, Ferreira JFM, et al. Combinação de anlodipino e enalaprila em pacientes hipertensos com doença coronariana. Arq Bras Cardiol. 2009; 92 (3): 183-9.
2. Morris AB, Li J, Kroenke K, Bruner-England TE, Young JM, Murray MD. Factors associated with drug adherence and blood pressure control in patients with hypertension. Pharmacotherapy. 2006; 26 (4): 483-92.
3. Kettani FZ, Dragomir A, Cote R, Roy L, Berard A, Blais L, et al. Impact of a better adherence to antihypertensive agents on cerebrovascular disease for primary prevention. Stroke. 2009; 40 (1): 213-20.
4. Goncalves CB, Moreira LB, Gus M, Fuchs FD. Adverse events of blood-pressure-lowering drugs: evidence of high incidence in a clinical setting. Eur J Clin Pharmacol. 2007; 63 (10): 973-8.
5. Goodman LS, Gilman A, Brunton LL, Lazo JS, Parker KL. Goodman & Gilman's the pharmacological basis of therapeutics. 11th ed. New York: McGraw-Hill; 2006.

Mailing address: Marcio Fernando Spagnól •
Endereço: Rua Ernesto Alves, 2131, apto104 – Centro – 95020-360 – Caxias do Sul, RS – Brazil
E-mail: marciospagnol@gmail.com

Letter to the Editor

Response to Rosa et al

We understand that the benefit of certain antihypertensive drugs have a dose-dependent effect, as in the case of the angiotensin-converting enzyme inhibitors (ACEI) in diabetic patients, especially when one evaluates the progression of diabetic nephropathy, regardless of the presence or absence of systemic arterial hypertension[1,2]. However, this was not the objective of our study. Moreover, in the studied sample, there was a small prevalence of diabetic patients (only two patients in group A [6.3%]).

Regarding the benefits of calcium-channel antagonists from the dihydropyridine group in chronic ischemic heart disease, in addition to the already established anti-angina effect of this type of medication, Amlodipine has also shown to be beneficial when compared to placebo and enalapril maleate, when evaluating the decrease in cardiovascular events and the progression of atherosclerosis in patients with normal blood pressure[3].

Regarding the half-life of the drugs used in our study, the blood pressure was always measured in the morning, before the medication was taken, therefore at the lowest point of its effect and thus, we obtained excellent pressure control: diastolic arterial pressure $\leq$ 85 mmHg in 93.8%-95.0% of the cases in groups A and B (p=ns), respectively, and systolic arterial pressure (mean $\pm$ SD) of 127.7 $\pm$ 13.4 and 125.3 $\pm$ 12.6 mmHg in groups A and B, respectively (p = 0.45).

Considering the results of the recently published ACCOMPLISH study[4], which compared the fixed combination of ACEI (benazepril) and calcium-channel antagonist (Amlodipine) and showed a decrease in the cardiovascular morbimortality in hypertensive patients with chronic coronary disease that used the first fixed combination, it can be observed that the association of the two classes of drugs used in our study adds a benefit beyond the expected one, due to the frank decrease in blood pressure, subsequently demonstrated by the Ambulatory Blood Pressure Monitoring sub-study in the patients from the ACCOMPLISH study[5], which did not show any difference in the blood pressure measurement between the two treatment groups. One must bear in mind that benazepril has exactly the same pharmacokinetic profile of enalapril.

References

1. Effects of ramipril on cardiovascular and microvascular outcomes in peoples with diabetes mellitus: results of the HOPE study and MICRO-HOPE substudy. Lancet. 2000; 355: 253-9.
2. Ravid M, Lang R, Rachmani R, Lishner M. Long-term renoprotective effect of angiotensin-converting enzyme inhibition in non-insulin-dependent diabetes mellitus: a 7-year follow-up study. Arch Intern Med. 1996; 156: 286-9.
3. Nissen SE, Tuzcu EM, Libby P, Thompson PD, Ghali M, Garza D, et al. Effect of antihypertensive agents on cardiovascular events in patients with coronary disease and normal blood pressure: the CAMELOT study: a randomized controlled trial. JAMA. 2004; 292: 2217-26.
4. Jamerson K, Weber MA, Bakris GL, Dahlöf B, Pitt B, Shi V, et al. ACCOMPLISH Trial Investigators. Benazepril plus amlodipine or hydrochlorothiazide for hypertension in high-risk patients. N Engl J Med. 2008; 359 (23): 2417-28.
5. Jamerson K, Bakris G. The ACCOMPLISH trial: Amlodipine / Benazepril (Lotred) and Benazepril / Hydrochlorothiazide (Lotensin). In: 24th Annual Scientific Meeting. American Society of Hypertension, May 6 to 9, 2009. San Francisco.