

The efficacy difference between lisinopril and valsartan among Middle Eastern communities

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Abstract

Upon reviewing the effects of many anti-hypertensive medications on patients, we noticed that some medications are working more efficiently in Middle Eastern communities while others are less efficient, so we decided to test the effects of lisinopril and valsartan in a single-blinded clinical trial on a Middle Eastern community sample.

We chose a random sample of 100 patients and followed them up with treatment for one month of each medication, and we found out that both ACE inhibitors and ARBs are effective in terms of lowering both systolic and diastolic blood pressures with a slightly better efficacy for lisinopril.

Keywords: Anti-hypertensive medications; ACE inhibitors; ARBs; Lisinopril and valsartan; Medication efficacy; Middle Eastern community sample

1. Introduction

Many anti-hypertensive medications efficacy has been tested on many ethnicities, but not many research projects have been conducted on Middle Eastern communities.

We decided to run this clinical trial to compare the effects of lisinopril 20 mg and valsartan 160 mg on Middle Eastern communities.

We all know that ACE inhibitors are less effective on black people, but the question is: what about other ethnicities? So, we decided to run that clinical trial to test the efficacy of both ACE inhibitors and ARBs and document the effects of both medications on systolic and diastolic blood pressures.

With the help of 134 patients who agreed to participate in this research for testing both medications, we ran a single-blind study in which the patients didn't know what medication was being used for them.

To ensure a fair comparison of both medications, we randomized the sample and made sure that the baseline characteristics of the patients were close.

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2. Methods

The concept of testing the two medications is done by randomly choosing 134 patients who have close baseline characteristics, which are:

- Their ages range from 40 to 60 years old.
- All have a sedentary lifestyle or minimal activity, like walking less than 30 minutes a day.
- No one has heart failure symptoms like exertion on minimal activity, leg swelling, or shortness of breath on lying flat.
- Diabetics are under control by treatment with a good glycemic index; prediabetics are on metformin and diet; and the rest are non-diabetics.
- All patients are following a healthy diet, and the ones with high LDL cholesterol levels are controlled by medications.
- No one has a disability or severe mobility issues.
- None of them are smokers, drink alcohol, or use recreational drugs.
- No other chronic diseases had been documented or medications had been used in the two-month period of the study.
- The random sample has 58 females and 42 males.

After ensuring all the baseline characteristics were close, all 134 patients were put on medication A, which is lisinopril 20 mg daily for the first month, followed by medication B, which is valsartan 160 mg daily for the second month.

All blood pressure readings before treatment ranged between Grades 1 and 2 [less than 160/100 and 180/110, respectively].

11 patients out of 134 lost to follow up, leaving 123 patients, and we chose 100 patients randomly for the sample.

Blood pressure readings were taken on a daily basis, and the mean was calculated for each medication, then systolic and diastolic pressures were compared together. If both systolic and diastolic pressures were lowered more by lisinopril, then symbol A was given; if both systolic and diastolic pressures were lowered more by valsartan, then symbol B was given. In terms of equivocal results, were not both systolic and diastolic pressures lowered together, symbol X was given.

3. Results

According to the results, we can see that lisinopril (Medication A) lowered both systolic and diastolic pressures more than valsartan in 53% of the patients (53 out of 100 patients), while valsartan (Medication B) lowered both systolic and diastolic pressures in 43% (43 out of 100 Patients), leaving 4 patients with equivocal results with no significant lowered both systolic and diastolic pressures on treatment.

4. Conclusion

We can conclude that lisinopril is slightly more effective than valsartan in terms of lowering both systolic and diastolic blood pressures among Middle Eastern communities.

In these patients with mild to moderate hypertension, valsartan was associated with a significantly reduced risk for adverse effects, especially cough.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.