

Ramipril Improves Walking Ability in Patients with Peripheral Arterial Disease

Summaries for Patients are a service provided by *Annals* to help patients better understand the complicated and often mystifying language of modern medicine.

The full report is titled “Brief Communication: Ramipril Markedly Improves Walking Ability in Patients with Peripheral Arterial Disease. A Randomized Trial.” It is in the 2 May 2006 issue of *Annals of Internal Medicine* (volume 144, pages 660-664). The authors are A.A. Ahimastos, A. Lawler, C.M. Reid, P.A. Blombery, and B.A. Kingwell.

What is the problem and what is known about it so far?

Peripheral arterial disease (PAD) is atherosclerosis of blood vessels in the legs. Atherosclerosis causes narrowing or blockage of the vessels, resulting in impaired blood flow. Risk factors for PAD include smoking, high blood pressure, high cholesterol level, and diabetes. Peripheral arterial disease causes leg pain or heaviness that develops with walking and is relieved by rest. The pain often limits the distance that people can walk. Peripheral arterial disease is diagnosed by showing that blood pressure in the lower leg is lower than blood pressure in the arm. Ramipril is a drug that lowers blood pressure and decreases the frequency of death in people with atherosclerosis even when they do not have high blood pressure. The effect of ramipril on walking ability in patients with PAD has never been studied.

Why did the researchers do this particular study?

To see whether ramipril improves walking ability in patients with PAD.

Who was studied?

40 middle-aged and older patients with PAD and no other clinically significant illness.

How was the study done?

The researchers asked participants to walk on a treadmill. They recorded the time it took participants to develop leg pain while walking on the treadmill and the maximum time participants could walk before having to stop because of their symptoms. They also asked patients to assess their own walking distance, walking speed, and ability to climb stairs during normal daily life. After all these measures, the researchers randomly assigned each patient to take ramipril or a placebo pill for 6 months. They then repeated all the measurements to see whether any measurement changed.

What did the researchers find?

Ramipril increased leg blood pressure after exercise, a sign that it improved blood flow to the legs. Patients who took ramipril could walk almost 4 minutes longer before developing leg pain than those who took placebo. Those who took ramipril could also walk a maximum time that was 7.5 minutes longer than that of those who took placebo. Participants who took ramipril reported large increases in walking distance, walking speed, and the ability to climb stairs.

What were the limitations of the study?

The study was relatively small, with only 20 people taking ramipril and 20 patients taking placebo. All patients had blood vessel narrowing or blockage that was below the groin. As a result, the findings may not apply to many people with PAD, such as those with diabetes or atherosclerosis that is above the groin.

What are the implications of the study?

Six months of treatment with ramipril improved symptoms in people with PAD. The findings need to be duplicated in studies with more people before ramipril can be widely recommended for relief of leg pain in all patients with PAD.

Summaries for Patients are presented for informational purposes only. These summaries are not a substitute for advice from your own medical provider. If you have questions about this material, or need medical advice about your own health or situation, please contact your physician. The summaries may be reproduced for not-for-profit educational purposes only. Any other uses must be approved by the American College of Physicians.