

FOCUS ON RESEARCH

A DOUBLE BLIND PLACEBO CONTROLLED TRIAL OF THE EFFECT OF PERINDOPRIL ON MUSCLE STRENGTH AND PHYSICAL FUNCTION IN OLDER PEOPLE

Researchers

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Aim

To determine if the ACE inhibitor Perindopril would improve muscle strength and physical function in older people without heart failure. ACE inhibitors are a family of drugs used to treat high blood pressure or heart failure

Project Outline/Methodology

A double blind placebo controlled randomized clinical trial carried out at the Section of Ageing & Health in the University of Dundee. Patients aged 65 years and over with difficulties in mobility or activities of daily living were recruited. We excluded those with heart failure, already taking ACE inhibitors, with contraindications to ACE inhibitors, unable to do the tests and those unable to provide consent. Participants were randomized to receive either Perindopril or placebo for 20 weeks. Outcomes were measured at baseline, 10 and 20 weeks. The main outcome measure was a change in the distance walked over 6 minutes. We also tested the time taken to stand from a chair 10 times and the time taken to get up from a chair, walk 3 metres and return to the chair. Self reported changes in activities of daily living and quality of life were measured using standard questionnaires. Daily activity levels were measured also over a 7 day period. Blood tests ensured the medication was tolerated. Tablets were counted to verify adherence to medication.

Key Results

Ninety five patients completed the study. After 20 weeks patients on Perindopril increased their 6 minute walking distance by 31.4 metres while those on placebo worsened. This improvement is comparable to that seen after 6 to 12 months of exercise in older people. Patients on Perindopril also maintained their quality of life while those on placebo reported a worsening of quality of life. Daily activity levels fell in both groups.

Most participants adhered to the medication for most of the time. The medication was well tolerated and side effects were minor.

Conclusions

Perindopril can maintain and improve muscle function, especially exercise capacity, in older people without heart failure.

What does this study add to the field?

With ageing, muscle function deteriorates and is a major cause of disability in later life. Until now exercise has been the mainstay of treatment to improve muscle function in old age. However many older people are unable or unwilling to exercise. ACE inhibitors are commonly used in patients with heart failure and we have previously shown that in older heart failure patients, Perindopril increases the 6 minute walking distance. The current study shows that ACE inhibitors can also improve physical function in older people without heart failure. This implies that the drug has a local action on muscles apart from heart failure.

Implications for Practice or Policy

ACE inhibitors are commonly used medications preventing cardiovascular morbidity and mortality. Our study shows that these medicines can additionally benefit muscle function and may lead to decreased disability in older people and maintenance of functional independence.

Where to next?

Our findings suggest a gradual improvement in muscle function over time. Studies with longer follow up periods will determine the magnitude of the improvement that can be achieved with ACE inhibition.

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