

Anatomy of a research article

Title

Look for keywords relevant to your topic

Short-term L-arginine therapy in patients with cardiovascular disease

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Abstract

Background: L-arginine is a naturally occurring amino acid that is converted to nitric oxide (NO) in the endothelium. NO is a potent vasodilator and has been shown to improve endothelial function and reduce cardiovascular risk. The aim of this study was to evaluate the effects of short-term L-arginine therapy on cardiovascular outcomes in patients with cardiovascular disease.

Introduction

Cardiovascular disease is the leading cause of death and disability worldwide. The pathogenesis of cardiovascular disease is complex and involves a combination of genetic and environmental factors. L-arginine is a naturally occurring amino acid that is converted to nitric oxide (NO) in the endothelium. NO is a potent vasodilator and has been shown to improve endothelial function and reduce cardiovascular risk. The aim of this study was to evaluate the effects of short-term L-arginine therapy on cardiovascular outcomes in patients with cardiovascular disease.

Methods

Patients
The study included 100 patients with cardiovascular disease who were randomized to receive either L-arginine or placebo. The patients were followed up for 12 weeks.

Treatment

The L-arginine group received 6g of L-arginine daily for 12 weeks. The placebo group received a matching placebo. The primary endpoint was the change in serum concentration of L-arginine.

Cardiovascular Research, June 7, 2016 – Vol 238, No. 2
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Results

Baseline vascular function

At baseline, there was no significant difference in vascular function between the L-arginine and placebo groups. However, after 12 weeks of treatment, the L-arginine group showed a significant improvement in vascular function compared to the placebo group.

Response to study drug

The L-arginine group showed a significant increase in serum concentration of L-arginine after 12 weeks of treatment. This increase was significantly greater than that seen in the placebo group.

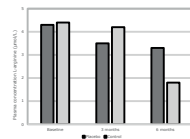


Figure 1: Changes in serum concentration of L-arginine.

Table 1: Adverse effects

	Placebo (n=50)	Treatment (n=50)
Severe adverse events	0	0
Acute coronary syndrome	1	0
Critical limb ischemia	2	0
Amputation	1	2
Major infection	0	1
Death	1	2

Discussion

The results of this study demonstrate that short-term L-arginine therapy significantly improves vascular function and increases serum concentration of L-arginine in patients with cardiovascular disease. These findings are consistent with the known effects of L-arginine on the endothelium and suggest that L-arginine may be a potential therapeutic target for the treatment of cardiovascular disease.

References

1. Yu Q, Schmidt J, McDonald R, Kadavitz A. Short-term L-arginine therapy in patients with cardiovascular disease. Cardiovascular Research. 2016;238(2):21-28.

Abstract

Summary of the article

1. Background or justification
2. Gap or research question
3. Methods
4. Key result
5. Contribution to the field or significance

Introduction

1. Known
2. Unknown or gaps in previous studies
3. Purpose of the study
 - Research question
 - Aims
 - Hypothesis

Results

The graphs and tables summarise the data. The text highlights the main trends shown in the data.

Methods

Were the methods appropriate to answer the research question?

- Scale
- Number of patients
- Controls
- Duration
- Measurements
- End-points

Discussion

The author(s) will:

1. Restate main findings
2. Explain the mechanisms, pathways or biology behind the findings
3. Relate findings to literature
4. State strengths/limitations of current study
5. Outline unanswered questions
6. Implications of findings to research field