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[Intervention Review]

Blood pressure lowering efficacy of coenzyme Q10 for primary hypertension

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ABSTRACT

Background

Studies have shown that coenzyme Q10 deficiency is associated with cardiovascular disease. Hypertension is a commonly measured surrogate marker for non-fatal and fatal cardiovascular endpoints such as heart attacks and strokes. Clinical trials have suggested that coenzyme Q10 supplementation can effectively lower blood pressure (BP).

Objectives

To determine the blood pressure lowering effect of coenzyme Q10 in primary hypertension.

Search methods

The Cochrane Central Register of Controlled Trials (2009 Issue 2), MEDLINE (1966 -May 2008), EMBASE (1982 - May 2008), and CINAHL (1970 - May 2008) as well as the reference lists of articles were searched for relevant clinical trials in any language.

Selection criteria

Double-blind, randomized, placebo-controlled parallel or crossover trials evaluating the BP lowering efficacy of coenzyme Q10 for a duration of at least 3 weeks in patients with primary hypertension.

Data collection and analysis

The primary author independently assessed the risk of bias and extracted the data. The second author verified data extraction.

Main results

Three clinical trials with a total of 96 participants were evaluated for the effects of coenzyme Q10 on blood pressure compared to placebo. Treatment with coenzyme Q10 in subjects with systolic BP (SBP) > 140 mmHg or diastolic BP (DBP) > 90 mmHg resulted in mean decreases in SBP of 11 mmHg (95% CI 8, 14) and DBP of 7 mmHg (95% CI 5, 8).

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Authors' conclusions

Due to the possible unreliability of some of the included studies, it is uncertain whether or not coenzyme Q10 reduces blood pressure in the long-term management of primary hypertension.

PLAIN LANGUAGE SUMMARY

Coenzyme Q10 for hypertension

Coenzyme Q10 has been studied as a potential treatment for hypertension, a common medical condition. However, there is not enough reliable evidence to show whether or not it can be a useful medication to lower blood pressure. A systematic review was conducted to try and use all available data to answer this question. Databases of clinical trials were searched for any studies that tested the effects of coenzyme Q10 on patients' blood pressure compared to a placebo. The test medications could be added to participants' regular anti-hypertensive medications or be used alone. Three trials with a total of 96 participants were found in which coenzyme Q10 was used in patients with high blood pressure. The patients took coenzyme Q10 or a placebo daily for up to 8-12 weeks. Weighted data analysis showed that the systolic blood pressure was reduced by 11 mmHg and the diastolic blood pressure was lowered by 7 mmHg compared to placebo. However, there are questions about the reliability of the available studies. Therefore, it is still uncertain if coenzyme Q10 could be a useful hypertension treatment, and more studies are needed.