



Cochrane
Library

Cochrane Database of Systematic Reviews

Chinese herbal medicines for people with impaired glucose tolerance or impaired fasting blood glucose (Review)

Grant SJ, Bensoussan A, Chang D, Kiat H, Klupp NL, Liu JP, Li X

Grant SJ, Bensoussan A, Chang D, Kiat H, Klupp NL, Liu JP, Li X.
Chinese herbal medicines for people with impaired glucose tolerance or impaired fasting blood glucose.
Cochrane Database of Systematic Reviews 2009, Issue 4. Art. No.: CD006690.
DOI: [10.1002/14651858.CD006690.pub2](https://doi.org/10.1002/14651858.CD006690.pub2).

www.cochranelibrary.com

[Intervention Review]

Chinese herbal medicines for people with impaired glucose tolerance or impaired fasting blood glucose

Suzanne J Grant¹, Alan Bensoussan², Dennis Chang², Hosen Kiat³, Nerida L Klupp², Jian Ping Liu⁴, Xun Li⁴

¹University of Western Sydney, South DC, Australia. ²Center for Complementary Medicine Research, University of Western Sydney, Sydney, Australia. ³Cardiac Health Institute, Eastwood, Australia. ⁴Centre for Evidence-Based Chinese Medicine, Beijing University of Chinese Medicine, Beijing, China

Contact: Suzanne J Grant, University of Western Sydney, Locked Bag 1797, Penrith, South DC, NWS 1797, Australia. s.grant@uws.edu.au.**Editorial group:** Cochrane Metabolic and Endocrine Disorders Group.**Publication status and date:** Unchanged, published in Issue 1, 2010.**Citation:** Grant SJ, Bensoussan A, Chang D, Kiat H, Klupp NL, Liu JP, Li X. Chinese herbal medicines for people with impaired glucose tolerance or impaired fasting blood glucose. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD006690. DOI: [10.1002/14651858.CD006690.pub2](https://doi.org/10.1002/14651858.CD006690.pub2).

Copyright © 2010 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

ABSTRACT

Background

Around 308 million people worldwide are estimated to have impaired glucose tolerance (IGT); 25% to 75% of these will develop diabetes within a decade of initial diagnosis. At diagnosis, half will have tissue-related damage and all have an increased risk for coronary heart disease.

Objectives

The objective of this review was to assess the effects and safety of Chinese herbal medicines for the treatment of people with impaired glucose tolerance or impaired fasting glucose (IFG).

Search methods

We searched the following databases: *The Cochrane Library*, PubMed, EMBASE, AMED, a range of Chinese language databases, SIGLE and databases of ongoing trials.

Selection criteria

Randomised clinical trials comparing Chinese herbal medicines with placebo, no treatment, pharmacological or non-pharmacological interventions in people with IGT or IFG were considered.

Data collection and analysis

Two authors independently extracted data. Trials were assessed for risk of bias against key criteria: random sequence generation, allocation concealment, blinding of participants, outcome assessors and intervention providers, incomplete outcome data, selective outcome reporting and other sources of bias.

Main results

This review examined 16 trials lasting four weeks to two years involving 1391 participants receiving 15 different Chinese herbal medicines in eight different comparisons. No trial reported on mortality, morbidity or costs. No serious adverse events like severe hypoglycaemia were observed. Meta-analysis of eight trials showed that those receiving Chinese herbal medicines combined with lifestyle modification were more than twice as likely to have their fasting plasma glucose levels return to normal levels (i.e. fasting plasma glucose <7.8 mmol/L and 2hr blood glucose <11.1 mmol/L) compared to lifestyle modification alone (RR 2.07; 95% confidence interval (CI) 1.52 to 2.82). Those receiving Chinese herbs were less likely to progress to diabetes over the duration of the trial (RR 0.33; 95% CI 0.19 to 0.58). However, all

trials had a considerable risk of bias and none of the specific herbal medicines comparison data was available from more than one study. Moreover, results could have been confounded by rates of natural reversion to normal glucose levels.

Authors' conclusions

The positive evidence in favour of Chinese herbal medicines for the treatment of IGT or IFG is constrained by the following factors: lack of trials that tested the same herbal medicine, lack of details on co-interventions, unclear methods of randomisation, poor reporting and other risks of bias.

PLAIN LANGUAGE SUMMARY

Chinese herbal medicines for people with impaired glucose tolerance or impaired fasting blood glucose

Around 308 million people worldwide are reported to have 'impaired glucose tolerance'. These individuals show higher than normal blood sugar (glucose) levels, but do not meet diagnostic criteria for having type 1 or type 2 diabetes. This may provide a window in which to prevent or delay the onset of diabetes and its complications like cardiovascular disease. Within a decade of the initial diagnosis 'impaired glucose tolerance' 25% to 75% are estimated to progress to diabetes.

This review examined 16 randomised controlled trials of 15 different Chinese herbal medicines. The trials lasted from four weeks to two years (average nine months) and involved altogether 1391 participants. Death from any cause, diabetic complications and economic outcomes were not investigated. No serious adverse events were reported.

The available evidence suggests that Chinese herbal medicines are able to lower and normalise high blood glucose. Due to considerable distortions (bias) in the trials, further high-quality and rigorously evaluated studies are required before any conclusions can confidently be reached about the effects of Chinese herbal medicines for the treatment of impaired glucose tolerance and the delay of diabetes onset.