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ORIGINAL RESEARCH

Effects of cinnamon on blood pressure and metabolic profile: a double-blind, randomized, placebo-controlled study in patients with stage 1 hypertension - Evidence review

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1. ABSTRACT

The analyzed study evaluated whether 1,500 mg of cinnamon per day, taken for 90 days, could modify blood pressure and certain metabolic indicators in people with stage 1 hypertension. The randomized, double-blind, placebo-controlled trial reported a statistically significant reduction in mean 24-hour systolic blood pressure and daytime systolic blood pressure in the treated group, as well as an increase in HDL and a reduction in LDL compared to the placebo. Fasting glycemia remained substantially unchanged.In the narrative of “The Choice to Live in Health or Illness” by Dr. A. Colonnese and R. Panzironi, the publication contributes to the passage stating that cinnamon may offer complementary support for vascular and lipid health in subjects with mild hypertension. Independent meta-analysis of randomized trials indicate a modest average reduction in blood pressure and, in populations with metabolic disorders, average improvements in certain lipids. However, a previous meta-analysis did not find statistically significant effects on LDL and HDL. Overall, the link is moderately supported, but it does not demonstrate that cinnamon can replace established antihypertensive or lipid-lowering therapies.

ONLINE ARTICLE

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MISSION

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Through articles, reviews, in-depth analyses and expert contributions, the Journal champions evidence-based medicine and science, fostering a correct interpretation of scientific data and countering misinformation. Every piece of content is developed with the aim of translating the complexity of research into understandable, useful and applicable information, while keeping intact the principles of accuracy, transparency and scientific independence.

Free from political, industrial and commercial influence, the journal stands as an authoritative and independent editorial space, dedicated to promoting scientific culture, professional development and the growth of health awareness among the public.

2. ANALYZED STUDY

Original title: *Cinnamon effects on blood pressure and metabolic profile: A double-blind, randomized, placebo-controlled trial in patients with stage 1 hypertension.*Authors: Shirzad F, Morovatdar N, Rezaee R, Tsarouhas K, Abdollahi Moghadam A. Journal: *Avicenna Journal of Phytomedicine*, 2021;11(1):91-100. DOI: 10.22038/ajp.2020.16138. PMID: 33628723. PMCID: PMC7885002.The research question was whether daily cinnamon supplementation could reduce blood pressure measured during normal daily activities and improve glycemia and blood lipids in people with stage 1 hypertension. The hypothesis evaluated was therefore clinical: to verify whether a nutraceutical intervention—that is, one based on a food-derived substance used as support—produced measurable changes compared to a placebo.The relevance to paragraph 30.2 is specific. The publication was cited for the segment of the narrative describing a reduction in mean 24-hour and daytime systolic blood pressure, accompanied by an increase in HDL-cholesterol and a reduction in LDL-cholesterol after 90 days of cinnamon. The study can document differences observed in its own sample and treatment period; it cannot establish long-term effects on heart attack, stroke, or mortality, nor can it replace hypertension treatment.

3. MATERIALS AND METHODS OF THE ORIGINAL STUDY

The study was a randomized, double-blind, placebo-controlled clinical trial. “Randomized” means that participants were randomly assigned to groups; “double-blind” means that neither the participants nor the researchers knew who was receiving cinnamon or a placebo during the study. Recruitment took place in Mashhad, Iran, between June and October 2019.Inclusion required a diagnosis of stage 1 hypertension confirmed by 24-hour ambulatory blood pressure monitoring. This technique records blood pressure during daily life and distinguishes daytime from nighttime values. Participants were assigned to either 1,500 mg of cinnamon capsules per day or a placebo for 90 days.At the beginning and on day 90, 24-hour systolic and diastolic blood pressure, daytime and nighttime blood pressure, lipid profile, and fasting glycemia were measured. The total sample size, detailed exclusion criteria, capsule composition, randomization procedures, management of any concomitant therapies, and the complete statistical plan are not reported in the available material, which consists only of the abstract.

4. RESULTS

At the beginning of the study, the two groups did not differ in a statistically significant way regarding vascular risk factors, education level, lipids, and blood pressure, with one exception: the group assigned to cinnamon had lower HDL-cholesterol compared to the placebo group, with a P-value of 0.03. HDL-cholesterol is the cholesterol fraction that transports cholesterol from the tissues to the liver; however, its isolated value does not define individual cardiovascular risk on its own.After 90 days, the abstract reports that there was no statistically significant difference between the groups regarding the overall lipid profile and blood pressure measured on day 90. At the same time, the cinnamon group showed a statistically significant reduction in mean 24-hour systolic blood pressure and mean daytime systolic blood pressure compared to baseline values. The comparison between groups showed a significantly greater reduction in the change of daytime systolic blood pressure with cinnamon compared to placebo.In the placebo group, however, mean nighttime systolic blood pressure and mean nighttime diastolic blood pressure decreased significantly. This finding shows why it is important to directly compare the changes in the two groups rather than considering only what changes within each group.Regarding metabolic indicators, fasting glycemia remained practically unchanged. Compared to the placebo, HDL-cholesterol in the cinnamon group increased by 5.8 units, with P=0.01, while LDL-cholesterol decreased by 17.7 units, with P=0.009. The abstract does not specify the unit of measurement for these changes nor does it provide confidence intervals. The authors defined the reduction in ambulatory systolic blood pressure as statistically significant, but clinically moderate.

5. INTERPRETATION

In simple terms, the study suggests that cinnamon may contribute to a small reduction in systolic blood pressure—the higher blood pressure reading—and to

favorable changes in two cholesterol fractions in people with mild hypertension. This result is consistent with the section dedicated to vascular and lipid effects, rather than a significant glycemic effect in this population, which was not described as diabetic.The segment actually documented by the publication is: cinnamon supplementation for 90 days reduction in daytime systolic blood pressure variation and reduction in 24-hour mean systolic blood pressure increase in HDL and reduction in LDL compared to placebo. No significant improvement in fasting glycemia was documented.Interpretive caution is necessary. The available material describes the study as a pilot and does not report the sample size, confidence intervals, detailed participant characteristics, or major clinical outcomes. Furthermore, the presence of significant nocturnal changes in the placebo group and the absence of a significant final difference between groups for all blood pressure and lipid parameters make it inappropriate to transform these data into a demonstration of general therapeutic efficacy.

6. INDEPENDENT CONFIRMING EVIDENCE

A systematic review and meta-analysis of nine randomized trials, involving a total of 641 adults, evaluated the effect of cinnamon on blood pressure. On average, supplementation was associated with a reduction in systolic blood pressure of 6.23 mmHg and diastolic blood pressure of 3.93 mmHg compared to controls. The effects on systolic blood pressure were greater in studies with doses of up to 2 g per day and a duration of at least 12 weeks. This result directly confirms the direction of the blood pressure effect described in the analyzed study, even though it comes from populations not limited solely to subjects with stage 1 hypertension [1].A second meta-analysis of 35 clinical trials in people with metabolic diseases found an average reduction in systolic blood pressure of 3.95 mmHg and diastolic blood pressure of 3.36 mmHg. It also observed average reductions in total cholesterol, triglycerides, and LDL-cholesterol, along with a small increase in HDL-cholesterol. This synthesis supports the vascular and lipid chain mentioned in the book's paragraph, but its applicability to mild hypertension without diabetes is indirect because the populations included had different metabolic conditions [2].The two meta-analyses do not prove that all people obtain the same benefit. They summarize studies with different cinnamon species, preparations, doses, durations, and clinical conditions. However, the convergence on the average reduction in blood pressure makes the observation of the original study biologically and clinically consistent.

7. CONFLICTING EVIDENCE

Regarding the lipid profile, results are not entirely consistent. A previous meta-analysis of 13 randomized trials and 750 participants did not find a statistically significant reduction in LDL-cholesterol nor a statistically significant increase in HDL-cholesterol. It did, however, observe reductions in triglycerides and total cholesterol [3].This evidence does not directly contradict the blood pressure reduction observed in the analyzed study, but it limits the certainty of the lipid component of the narrative. The differences may depend on populations with diabetes or other metabolic alterations, the dose and duration of supplementation, the plant species used, and the variability of the protocols. No directly conflicting evidence sufficiently relevant to the reduction of blood pressure in subjects with stage 1 hypertension was identified; this does not prove the absence of contrary results.

8. QUADRO COMPARATIVO E SINTESI DELLE EVIDENZE

The table distinguishes the study that is the subject of the Evidence Review from the independent publications used to confirm or contextualize the passage in the paragraph.

Quadro comparativo

Reference	Study type	Population or model	Main result	Direction of evidence	Strength of evidence
Original study	Randomized, double-blind, placebo-controlled trial; material available: abstract only	People with stage 1 hypertension; sample size not reported in available material	Cinnamon 1,500 mg/day for 90 days: significant reduction in mean 24-hour and daytime systolic blood pressure; HDL increased by 5.8 units and LDL reduced by 17.7 units compared to placebo	biologically consistent evidence	moderate
[1]	Systematic review and meta-analysis of RCTs	641 adults in 9 randomized trials	Mean reduction of 6.23 mmHg in systolic blood pressure and 3.93 mmHg in diastolic blood pressure	direct confirmation	moderate
[2]	Systematic review and dose-response meta-analysis of RCTs	35 clinical trials in people with metabolic diseases	Mean reduction in systolic blood pressure, diastolic blood pressure, LDL-cholesterol, total cholesterol, and triglycerides; small mean increase in HDL-cholesterol	indirect confirmation	moderate
[3]	Systematic review and meta-analysis of RCTs	750 participants in 13 randomized trials	No statistically significant effect on LDL-cholesterol and HDL-cholesterol; reduction in triglycerides and total cholesterol	discordant evidence	moderate

9. SINTESI EDITORIALE E CONCLUSIONI

CONCLUSIONS

The study analyzed directly supports the section dedicated to cinnamon in adults with stage 1 hypertension: after 90 days of supplementation, a reduction in ambulatory systolic blood pressure and favorable changes in HDL and LDL were observed compared to the placebo. Independent evidence makes the hypothesis of a modest effect on blood pressure quite well-supported. The benefit on HDL and LDL, however, remains moderately supported and dependent on the experimental context. Larger, longer studies conducted specifically in people with mild hypertension are needed, with clinical outcomes and safety evaluated comprehensively.

Aggiornato al 17/11/2026. Questo contenuto riflette una sintesi divulgativa delle evidenze scientifiche al momento della pubblicazione e non sostituisce il parere medico.

10. TRANSPARENCY AND SCIENTIFIC RESPONSIBILITY

Artificial Intelligence was used solely as a tool for editorial and documentary support. All content, interpretations, bibliographic citations and conclusions have been verified, reviewed and approved by the author, who assumes full scientific responsibility for them.

The manuscript was also subjected to independent peer review prior to publication.

To ensure the greatest transparency, the complete history of the article, including the dates of submission, revision, acceptance and publication, as well as information on the peer review process, is available on the dedicated Article History page.

11. RIFERIMENTI BIBLIOGRAFICI

[1] **Anti-hypertensive effects of cinnamon supplementation in adults: A systematic review and dose-response Meta-analysis of randomized controlled trials**
Mousavi et al., 2020
Critical Reviews in Food Science and Nutrition
DOI: https://doi.org/10.1080/10408398.2019.1678012

[2] **The beneficial effects of cinnamon among patients with metabolic diseases: A systematic review and dose-response meta-analysis of randomized-controlled trials**
Kutbi et al., 2022
Critical Reviews in Food Science and Nutrition
DOI: https://doi.org/10.1080/10408398.2021.1896473

[3] **The effects of cinnamon supplementation on blood lipid concentrations: A systematic review and meta-analysis**
Maierean et al., 2017
Journal of Clinical Lipidology
DOI: https://doi.org/10.1016/j.jacl.2017.08.004