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The effects of Garcinia cambogia (hydroxycitric acid) on lipid profile: A systematic review and meta-analysis of randomized controlled trials

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Abstract

Garcinia cambogia (GC) has antioxidant, anticancer, antihistamine, and antimicrobial properties. To determine the effect of GC on lipid profiles, a systematic review and meta-analysis was carried out. Up to February 9, 2023, six electronic databases (Web of Science, Cochrane Library, Embase, PubMed, Scopus, and Google Scholar) were searched at any time without limitations. Trials examining the impact of GC on serum levels of total cholesterol (TC), triglycerides (TG), low-density lipoprotein cholesterol, and high-density lipoprotein cholesterol (HDL-C) in adults were included. The total effect was shown as a weighted mean difference (WMD) and 95% confidence interval (CI) in a random-effects meta-analysis approach. This systematic review and meta-analysis included 14 trials involving 623 subjects. Plasma levels of TC (WMD: -6.76 mg/dL; CI: -12.39 to -0.59, p-value = 0.032), and TG (WMD: -24.21 mg/dL; CI: -37.84 to -10.58, p < 0.001) were significantly reduced after GC use, and plasma HDL-C (WMD: 2.95 mg/dL; CI: 2.01 to 3.89, p < 0.001) levels increased. low-density lipoprotein cholesterol levels (WMD: -1.15 mg/dL; CI: -16.08 to 13.78, p-value = 0.880) were not significantly affected. The effects of lowering TC and TG were more pronounced for periods longer than 8 weeks. Consuming GC has a positive impact on TC, TG, and HDL-C concentrations. The limitations of this study include the short duration of analyzed interventions and significant heterogeneity. Nevertheless, it is imperative to conduct well-structured, and high-quality long-term trials to comprehensively evaluate the clinical effectiveness of GC on lipid profile, and validate these findings.

Keywords: Garcinia cambogia; lipid profile; meta-analysis; randomized controlled trial.

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