

Evidence-based Antidiabetic Effectiveness of Cinnamomum Zeylanicum (Ceylon Cinnamon)

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The alarming rise in type 2 diabetes mellitus (T2DM) underscores the urgency for innovative approaches. While pharmaceuticals often entail chronic usage with associated adverse effects, nutraceuticals offer a promising alternative by potentially mitigating these effects. *Cinnamomum zeylanicum* (Ceylon cinnamon), is popular due to its dual role as both a flavorful spice and the potential health benefits. However, the evidence-based reviews on the beneficial effects of *C. zeylanicum* on T2DM are limited. Thus, the current study aimed to review the antidiabetic potential of *C. zeylanicum* in T2DM patients by conducting a systematic review. Google Scholar, PubMed, and Embase were used as the main search engines. PRISMA-2020 guidelines were used to select primary papers between 2011 – 2024. Out of a total of 20,000 initial articles, only eight primary articles met the inclusion criteria. The quality of the included studies was evaluated using the Critical Appraisal Skills Programme (CASP) tool. All the selected studies have used powdered *C. zeylanicum* bark as the intervention. Sample sizes of the primary studies included in the review ranged from 25 to 210 T2DM patients. The duration of the studies varied, ranging from 8 to 16 weeks, with doses ranging from 1g/day to 3g/day. In all selected studies effectiveness was tested using fasting blood glucose (FBG) and glycosylated hemoglobin (HbA1c) levels. Out of eight studies, six showed that T2DM patients who received *C. zeylanicum* showed a significant reduction ($p < 0.05$) in fasting blood glucose compared to the control group. Also, there was a clear reduction in HbA1c % ($p < 0.05$) in T2DM patients compared to those who received a placebo. The available evidence suggests that chronic use of *C. zeylanicum* positively affects glycemic control in patients with T2DM. However, there are limitations in comparing published data due to concerns about the quality and heterogeneity of the studies, including variability in doses and administration forms. Consequently, more conclusive evidence is needed to determine the safety and efficacy of chronic cinnamon use and to compare the acute effects with chronic use.

Keywords: Ceylon Cinnamon, *Cinnamomum Zeylanicum*, Chronic Studies, Antidiabetic Effectiveness, T2DM Patients