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Curcuminoid therapy mitigates oxidative stress and inflammation in metabolic syndrome: Evidence from a clinical trial

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Background: Metabolic syndrome (MetS) is commonly accompanied by a heightened state ofoxidative stress and inflammation; both being crucial to the pathogenesis of cardiovascular disease. Curcuminoids are polyphenolic compounds with documented protective effects against oxidative stress and inflammation.

Methods: In this randomized double-blind placebo-controlled trial, 100subjects diagnosed with MetS were randomly allocated to a proprietary curcuminoid preparation (Curcumin C3 Complex®, Sami Labs LTD, Bangalore, India) (n=50) or placebo (n=50) for 8 weeks. Curcuminoids were administered at a daily dose of 1g, together with piperine (Bioperine®; Sami Labs LTD, Bangalore, India;10 mg/day) in order to enhance oral bioavailability. Serum activities of superoxide dismutase (SOD) and concentrations of malondialdehyde (MDA) and high-sensitivity C-reactive protein (CRP) were measured at baseline and after completion of the treatment period.

Results: There was a significant improvement in serum SOD activities following curcuminoid therapy, whilst serum MDA and CRP concentrations were reduced by the end of trial. The magnitude of changes in all three parameters was significantly greater in the curcuminoid versus placebo group.

Conclusions: Supplementation with curcuminoid-piperine combination is an effective strategy to mitigate oxidative stress and inflammation in patients with MetS.

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