



Soy isoflavones and inflammation in participants with chronic diseases

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Gholami et al. conducted a meta-analysis of randomized controlled trials to determine the effect of soy isoflavones on serum C-reactive protein (CRP) concentrations in patients with chronic inflammatory disorders [1]. Although there was no significant effect on the serum concentration of CRP following soy isoflavone intake, a significant inverse relationship was observed in patients aged >57 years and with baseline CRP level >3.75 mg/L. Three meta-analyses were presented to know the effects of soy isoflavones on systemic inflammatory biomarkers.

Prokopidis et al. conducted a meta-analysis to investigate the effects of whey and soy proteins on inflammatory markers [2]. Significant reductions of circulating interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF- α) were observed, which was prominent in individuals with sarcopenia and pre-frailty. Individuals with sarcopenia may have a high prevalence of comorbidities, including chronic inflammatory disorders and older age. In addition to CRP, other inflammatory cytokines should be examined, simultaneously, to understand the effect of soy isoflavone intake on subsequent risk reduction in comorbidities and related biomarker levels.

Jamshidi et al. conducted a meta-analysis to evaluate the effect of whey protein on TNF- α and IL-6, and there was no favorable effect when using other types of proteins or carbohydrate as controls [3]. The control substance may be important in evaluating the effect of whey protein on the levels of TNF- α and IL-6. A reduction in biomarkers following the intake of a specific nutritional component should be evaluated to help understand the difference in the biological mechanism of the association.

Finally, Byrne et al. conducted a meta-analysis to evaluate the effect of interventions targeting frailty and sarcopenia on the subsequent levels of inflammatory markers [4]. There were favorable effects for CRP and IL-6, but not for TNF- α . They could not clarify why the results were different among inflammatory markers; however, frailty and sarcopenia may be related to specific inflammatory markers. Nutritional intake, body composition, and chronic

inflammatory disorders are interrelated, and these variables may interact with each other. Causal associations should be investigated by considering other biological indicators such as glucose intolerance, lipid metabolism, and blood pressure.

References

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