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Background: Cancer anorexia–cachexia syndrome (CACS) is common among patients with advanced solid cancer and associated with poor prognosis. CACS is a hypercatabolic state, which comprises adipose tissue and skeletal muscle loss, which is characterized by negative protein and energy balance, loss of lean body mass and adipose tissue. Also, CACS increase systemic inflammation. The treatment of CACS is still unclear. Curcumin has been shown anti-cancer and anti-inflammatory effects, including attenuation of CACS in animal models. Therefore, clinical study of curcumin for CACS is required.

Method: This is randomized, double-blind, placebo-controlled phase II study, 52 patients with CACS in solid malignancy were enrolled and randomized in 1:1 to receive oral curcumin (at a dose of 400 mg twice daily) or placebo for 8 weeks. The primary end point was body tissue composition and the secondary end points were body weight and body mass index, Hand grip muscle strengthening, safety and toxicity.

Results: All parameters of body compositions were not statistically significant different between two groups: curcumin group and placebo group, which were consist body fat mass -0.9, SEM=0.94 versus -1.65, SEM=1 (p=0.58), skeletal muscle mass -0.17, SEM=0.49 versus +0.4, SEM=0.52 (p=0.42) and percent body fat –1.0, SEM=0.65 versus +0.1, SEM=0.68 (p=0.3) including with basal metabolic rate -5.3, SEM=18 versus +18.3, SEM=19 (p=0.37). The average of weight loss was also not significantly different between two groups, -1.04, SEM=0.63 in curcumin group versus –1.15, SEM=0.61 in placebo group, p=0.9. Notably, patient with curcumin had less reduction of hand-grip muscle strength on both hands [right hand: -2.09 in curcumin versus -3.68 in placebo; p=0.46], [left hand: -1.24 versus -5.04; p=0.12], and basal metabolic rate than placebo group. Most adverse events were grade 1 on both groups similarly.

Conclusions: Curcumin was not shown to be superior to placebo with regard to increasing the body composition in cancer patients with CACS. However, curcumin might show some clinical benefits, including slow progression of hand-grip muscle strength loss and basal metabolic rate. Further investigations should be explored.