Rutoside and Hydrolytic Enzymes Do Not Attenuate Marathon-Induced Inflammation.

Vigorous and prolonged exercise such as marathon running increases inflammatory markers and the risk of upper respiratory illness (URI) in athletes. Nutritional supplements are being tested as countermeasures of exercise-induced inflammation and immune dysfunction. In this prospective randomized, double-blind, placebo-controlled phase I trial, healthy male runners (N = 138, age 42 ± 11 yr) were supplemented with rutoside (600-1200 mg·d) and hydrolytic enzymes (540-1080 mg·d bromelain, 288-576 mg·d trypsin) (WOB) or placebo (PL) for 1 wk before and 2 wk after the Munich Marathon 2013. Blood samples were collected 5 wk prerace and immediately, 24 h, and 72 h postrace and analyzed for inflammation biomarkers (interleukins [IL] 6 and 10, high-sensitivity C-reactive protein, and leukocytes). URI rates, assessed by the Wisconsin Upper Respiratory Symptom Survey, were compared between the study groups during the 2-wk period after the marathon race. URI was defined if the Wisconsin Upper Respiratory Symptom Survey score was equal or greater than seven, representing either one severe symptom or seven mild symptoms. Immediately postrace, the increase of IL-6 was not significantly different between the WOB and the PL groups (median [interquartile range]: WOB, 33.8 [22.5-58.8] ng·L; PL, 35.6 [24.8-61.29] ng·L; P = 0.758). No significant group
differences were observed for increases of IL-10, high-sensitivity C-reactive protein, or leukocytes pre- to postrace (all P > 0.05). From race day until 2 wk after the marathon race, the percentage of individuals with at least one URI did not significantly differ between the groups (WOB, 50.0%; PL, 51.5%; P = 0.859). Supplementation with rutoside and hydrolytic enzymes before and after a marathon race did not attenuate postrace inflammation or decrease URI incidence in nonelite male marathon runners.

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