

Cherries as anti-inflammatory therapy in musculoskeletal medicine

The other day I was discussing oral analgesics with one of my patients, an avid long-distance runner. She surprised me by asking, “What do you know about cherries?” I was born and raised in northern Michigan, the largest producer of tart cherries and the third largest producer of sweet cherries in the United States, according to the US Department of Agriculture.¹ So I met her gaze confidently and answered, “I know they’re yummy.” She politely told me that the Internet is abuzz with claims that cherry consumption is as good for muscle pain as common NSAIDs. It sounded too good to be true.

Background

Anti-inflammatory cherry use is not a new idea. In the 1950s cherries were recommended for arthritis and gout.² However, the first scientifically rigorous cherry studies came several decades later. In 2001 a group at Michigan State University used in vitro enzyme assays to show that cherry juice has COX-2 inhibitory activity similar to both ibuprofen and naproxen.³

Review of the evidence

Later studies evaluated cherry juice in vivo. A 2006 randomized, placebo-controlled, crossover study had 14 male college students drink 12 oz. of cherry juice blend (the equivalent of 50–60 cherries) or a placebo (Kool-Aid®) BID for 8 days. On day 4 they were subjected to elbow flexion exercises, and on day 8 elbow flexion strength was measured. Day 8 (day 4 postexertion) strength loss was 22% in the placebo group, but just 4% in the cherry juice group ($P < .0001$).⁴

In the 2008 London Marathon, a group of 20 runners (13 men, 7 women) were divided into 2 (nonrandomized) groups for a placebo-controlled trial. Subjects drank 8 oz. of cherry juice blend (concentrated to the equivalent of 50–60 cherries) or a placebo (a “fruit-flavored concentrate”) BID for 5 days before and 2 days after the marathon (8 days total). There were no significant differences in markers of postexercise muscle damage (creatinine kinase and lactate dehydrogenase). The runners in the cherry juice group had significantly greater strength in their knee extensor muscles (mean 435 Newtons generated vs 349 Newtons in the placebo group, $P < .05$) 2 days after the race. The authors interpreted these data to suggest muscle recovery was faster with cherry juice.⁵

Another group of 54 runners (36 men, 18 women) competing in a relay run (about 26 km per runner) were enrolled in a randomized placebo-controlled study. Subjects drank 10.5 oz. of cherry juice blend (the equivalent of 45–50 cherries) or a placebo (Kraft unsweetened fruit punch mix) BID for 7 days before the race and on the day of the race (8 days total). The cherry juice-drinking group reported a significantly smaller increase in pain (12 vs 37 mm on a 100-mm visual analog scale, $P < .001$) after the race.⁶

Clinical considerations

Personally, I always get suspicious when something as old as food is suddenly found to have some “new” use. These studies enlisted small numbers of subjects who were fed the equivalent of 90–120 cherries a day. On my hungriest day that is still a lot of cherries. Also, much of the available data are from in vitro studies or used outcomes that patients do not care about. Only 2 studies evaluated pain symptoms and musculoskeletal recovery in real-world competitive settings.

So my patient was right—to a point. Reputable scientific studies do suggest that cherries have mild anti-inflammatory properties. If athletes want to increase their cherry consumption to decrease postexercise inflammation, I encourage them wholeheartedly. But I’ll still have them carry some ibuprofen as back-up.

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