Cocoa Flavanol Supplementation Influences Skin Conditions of Photo-Aged Women: A 24-Week Double-Blind, Randomized, Controlled Trial.

Abstract

BACKGROUND:
The consumption of dietary antioxidants is considered to be a good strategy against photo-aging. However, the results of previous clinical trials that investigated the effects of oral consumption of high-flavanol cocoa products on skin photo-aging have been contradictory.

OBJECTIVE:
The aim of this study was to investigate whether high-flavanol cocoa supplementation would improve the moderately photo-aged facial skin of female participants, by assessing skin wrinkles and elasticity.

METHODS:
We performed a 24-wk, randomized, double-blind, placebo-controlled study to evaluate the effects of oral supplementation of cocoa flavanols on cutaneous photo-aging. All participants were moderately photo-aged Korean women with visible facial wrinkles (age range: 43-86 y). Participants were randomly assigned to receive a placebo beverage or cocoa beverage that contained 320 mg total cocoa flavanols/d. We measured wrinkles, skin elasticity, and hydration at baseline and at 12 and 24 wk. The primary endpoint was the mean percentage change in the average roughness value (Rz) at 24 wk.

RESULTS:
At 24 wk, the mean percentage change in Rz (primary endpoint) was significantly lower in the cocoa group than in the placebo group (-8.7 percentage points; 95% CI: -16.1, -1.3 percentage points; P = 0.023). The mean percentage changes in gross elasticity, as determined by a cutometer, also differed between the groups at 12 wk (9.1 percentage points; 95% CI: 1.5, 16.7 percentage points; P = 0.020) and 24 wk (8.6 percentage points; 95% CI: 1.0, 16.2 percentage points; P = 0.027). However, there were no significant differences in skin hydration and barrier integrity between the 2 groups.

CONCLUSIONS:
In moderately photo-aged women, regular cocoa flavanol consumption had positive effects on facial wrinkles and elasticity. Cocoa flavanol supplementation may contribute to the prevention of the progression of photo-aging. This trial was registered at clinicaltrials.gov as NCT02060097.

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