Clinical Nutrition 38 (2019) 480–481

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Letter to the Editor

Pterostilbene raises low density lipoprotein cholesterol in people

Keywords:
Pterostilbene
Low density lipoprotein cholesterol
Sirtuin 1
Nicotinamide riboside
Polyphenol

Resveratrol and pterostilbene are polyphenolic compounds found in fruits and nuts. Though resveratrol does not depend on sirtuin 1 for its metabolic effects [1,2] and pterostilbene has not been shown to bind to sirtuin 1, Elysium Health combines nicotinamide riboside (NR) [3] with pterostilbene with the expressed purpose of increasing sirtuin 1 activity by a combined mechanism [4]. The literature indicates that sirtuin 1 activators would be expected to improve lipid management [5,6]. However, as summarized in Table 1, daily administration of NR plus pterostilbene produced a dose-dependent and clinically statistically significant increase in total cholesterol driven entirely by increased low density lipoprotein cholesterol (LDL-C) [4]. The authors did not release their primary data for independent assessment of significance and did not disclose results previously reported for pterostilbene [7] that are wholly consistent with the study's finding of what is clearly a clinically meaningful increase in LDL-C. While the authors cite this study to point out the earlier observation that pterostilbene reduced blood pressure, they neglected to cite clinically meaningful increases in LDL-C for treatment groups receiving 100 mg or 250 mg daily pterostilbene for 6–8 weeks (Table 1) as well as significantly decreased high density lipoprotein cholesterol in subjects who were not taking statins [7]. These data are inconsistent with pterostilbene as a sirtuin 1 activator and raise important questions about the safety of pterostilbene supplementation considering the importance of controlling LDL-C to cardiovascular health [8,9]. Significantly, clinical studies of NR alone (without pterostilbene) at higher doses than tested in the Elysium Health study established safety and showed no increase in LDL-C [10,11].

Table 1
Pterostilbene elevates LDL-C.

Pterostilbene dose (mg/day)	Placebo-corrected increase in LDL-C (mg/dl)	P-value
100 (7)	20.0	0.006
250 (7)	19.7	0.007
50 with 250 mg NR (4)	5.4	≤0.05
100 with 500 mg NR (4)	14.7	≤0.05

Conflict of interest

CB developed intellectual property exclusively licensed and developed by ChromaDex for nutritional and therapeutic uses of NR.

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https://doi.org/10.1016/j.clnu.2018.10.007
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28 September 2018