South Med J. 2008 Dec;101(12):1203-8.

Dark chocolate effect on platelet activity, C-reactive protein and lipid profile: a pilot study.

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Erratum in:

South Med J. 2009 Mar;102(3):332. Anand, Singla [corrected to Singla, Anand].

Comment in:

South Med J. 2008 Dec;101(12):1194.

Abstract

BACKGROUND: Dark chocolate (DC) is one of the richest sources of flavonoids. Since DC has been demonstrated to have beneficial effects on the cardiovascular system, our study examined its effect on platelet reactivity, inflammation, and lipid levels in healthy subjects.

METHODS: In 28 healthy volunteers, we analyzed the effect of one week of DC (providing 700 mg of flavonoids/day). The primary outcome was to determine the effects of DC consumption on platelet activity measured by flow cytometry (adenosine diphosphate [ADP]- and arachidonic acid [AA]-induced total and activated glycoprotein (GP) IIb/IIIa as well as P-selectin expression). In addition to this, we measured the effect of DC on high-sensitivity C-reactive protein (hsCRP), high-density lipid cholesterol (HDL) and low-density lipid cholesterol (LDL) levels.

RESULTS: Following seven days of regular DC ingestion, LDL fell by 6% (120 +/- 38 vs 112 +/- 37 mg/dL, $P < 0.018$) and HDL rose by 9% (66 +/- 23 vs 72 +/- 26 mg/dL, $P < 0.0019$). ADP- and AA-induced activated GPIIb/IIIa expression was reduced by DC [27.3 +/- 27.8 vs 17.4 +/- 20.5 mean fluorescence intensity (MFI), $P < 0.006$; and 9.2 +/- 6.5 vs. 6.1 +/- 2.2 MFI, $P < 0.005$, respectively]. DC reduced hsCRP levels in women (1.8 +/- 2.1 vs. 1.4 +/- 1.7 mg/dL, $P < 0.04$).

CONCLUSIONS: One week of DC ingestion improved lipid profiles and decreased platelet reactivity within the total group while reducing inflammation only in women. Regular dark chocolate ingestion may have cardioprotective properties. Further long-term research is warranted to evaluate the effect of flavonoids on cardiovascular health and to determine whether DC's beneficial effects are related to flavonoids or some yet unknown component. This research is based on a larger study which was presented at the American Heart Association Scientific Sessions 2007. PMID: 19005437 [PubMed - indexed for MEDLINE]