Decreasing Blood Pressure: One bite of chocolate at a time

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ABSTRACT

Chocolate is one of the most popular foods in the world. Since 460 AD, humans have been consuming and using cocoa products, derived from the cacao tree (Katz & Doughty, 2011). In the past, cocoa has been used as a source of indulgence and a pharmaceutical product due to its' healing and medicinal properties (Katz & Doughty, 2011). More recently, the medicinal properties of dark chocolate have been of particular interest due to an ethnopharmacological study of the Kuna Indians of the San Blas Islands of Panama who consume thirty ounces of natural cocoa beverages daily (Katz & Doughty, 2011). Studies have found that the Kuna Indians have a low prevalence of hypertension (2.2%) at all ages, as well as lower rates of mortality than those who have moved inland to urban areas (prevalence of 15.7%) (Katz & Doughty, 2011). The study of this population strengthens the hypothesis of a potential link between chocolate and a positive effect on cardiovascular health. In conclusion, dark chocolate can contribute to a healthy lifestyle.

METHODOLOGY

A structured literature review, using the uOttawa library database, was conducted using studies published from 2005 to 2015. This is because studies published before 2005 were not rigorous, and did not contain methods of continuing variables to account for the variations in the test subjects. Articles written in English were analyzed to obtain data on the association between dark chocolate consumption and blood pressure levels, as well as increased flow-mediated dilation. Only peer-reviewed papers, with experiments conducted on pre-hypertensive and hypertensive humans were considered. After applying these search parameters, 14 articles remained. Of these 14 articles, studies conducted on animals, as well as expert opinion papers and editorials were excluded. The remaining 11 articles were included in the final analysis.

RESULTS

In general, the majority of the literature supported the relationship between dark chocolate consumption, and lowered blood pressure due to lowered LDL levels, and increased flow mediated dilation. However, it was observed that the validity of this relationship differed between the case-control and prospective cohort studies. The case-control studies showed a positive association that the ability to strictly monitor diet and the use of control and experimental groups as to compare the results. Seven prospective cohort studies found similar results, where blood pressure was significantly lowered in those who consumed dark chocolate. The association between dark chocolate and reduced blood pressure has been shown, by lowered blood pressure values among participants of all ages. Furthermore, it was found that when chocolate consumption stopped, blood pressure when back to pre-treatment levels. Dark chocolate is mainly short term. Four prospective cohort studies showed an association between blood pressure levels because of uncontrollable confounding variables. Blood pressure, level of physical activity, which could have contributed to the lowered blood pressure levels. The use it can be concluded that short term dark chocolate consumption has been shown to decrease LDL levels, and increase vasodilation, thus lowering hypertension among the selected population.

DISCUSSION

In conclusion, the majority of the literature supported the relationship between dark chocolate consumption, and lowered blood pressure due to lowered LDL levels, and increased flow mediated dilation. However, it was observed that the validity of this relationship differed between the case-control and prospective cohort studies. The case-control studies showed a positive association due to the ability to strictly monitor diet and the use of control and experimental groups as to compare the results. Seven prospective cohort studies found similar results, where blood pressure was significantly lowered in those who consumed dark chocolate. The association between dark chocolate and reduced blood pressure has been shown, by lowered blood pressure values among participants of all ages. Furthermore, it was found that when chocolate consumption stopped, blood pressure when back to pre-treatment levels. Dark chocolate is mainly short term. Four prospective cohort studies showed an association between blood pressure levels because of uncontrollable confounding variables. Blood pressure, level of physical activity, which could have contributed to the lowered blood pressure levels. The use it can be concluded that short term dark chocolate consumption has been shown to decrease LDL levels, and increase vasodilation, thus lowering hypertension among the selected population.

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