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Antioxidant effects of autumn olive (*elaeagnus umbellata*) in db/db mice

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Diabetes mellitus increases oxidative stress which contributes to the development of cardiovascular complications, the leading causes of premature mortality among patients with type 2 diabetes. Fruit of autumn olive (AO, *Elaeagnus umbellata*) is a good source of phytochemicals including lycopene which shows strong antioxidant activity. The purpose of this study was to investigate the antioxidant effect of AO in db/db mice, an animal model of type 2 diabetes. Five-week-old male C57BL/KsJ-db/db mice (n=28) were fed AIN-93G diet or diet containing 0.4% (low AO (LAO) group) or 0.8% ethanol extract of autumn olive fruit (high AO (HAO) group) or 0.04% acarbose, an oral hypoglycemic agent, for 7 weeks after 1 week of adaptation. The animals were sacrificed after an overnight-fast and levels of lipid peroxides and activities of antioxidant enzymes in the liver were measured. Thiobarbituric Acid Reactive Substances (TBARS) levels of LAO and HAO groups were lower by 25% and 38%, respectively, than those of the control group ($p<0.05$). Consumption of acarbose did not significantly affect hepatic TBARS levels in db/db mice. Activities of superoxide dismutase, catalase and glutathione peroxidase of LAO and HAO groups were significantly elevated compared with the control and acarbose groups ($p<0.05$). These results indicate that fruit of autumn olive could be effective in improving antioxidant status in db/db mice, suggesting that it may be useful in the prevention of cardiovascular complications.

Biography

Jung In Kim has completed her Ph.D. at the age of 30 years from University of California at Berkeley Department of Nutritional Sciences. She is a professor at Inje University Department of Smart Foods and Drugs. She has published more than 30 papers in reputed journals.

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