

Food supplementation with an olive (*Olea europaea* L.) leaf extract reduces blood pressure in borderline hypertensive monozygotic twins.

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Source

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Abstract

Hypertension is a harmful disease factor that develops unnoticed over time. The treatment of hypertension is aimed at an early diagnosis followed by adequate lifestyle changes rather than pharmacological treatment. The olive leaf extract, having antihypertensive actions in rats, was tested as a food supplement in an open study including 40 borderline hypertensive monozygotic twins. Twins of each pair were assigned to different groups receiving 500 or 1000 mg/day Olive leaf extract for 8 weeks, or advice on a favourable lifestyle. Body weight, heart rate, blood pressure, glucose and lipids were measured fortnightly. Blood pressure changed significantly within pairs, depending on the dose, with mean systolic differences of $< \text{ or } = 6$ mmHg (500 mg vs control) and $< \text{ or } = 13$ mmHg (1000 vs 500 mg), and diastolic differences of $< \text{ or } = 5$ mmHg. After 8 weeks, mean blood pressure remained unchanged from baseline in controls (systolic/diastolic: $133 \pm 5/77 \pm 6$ vs $135 \pm 11/80 \pm 7$ mmHg) and the low-dose group ($136 \pm 7/77 \pm 7$ vs $133 \pm 10/76 \pm 7$), but had significantly decreased for the high dose group ($137 \pm 10/80 \pm 10$ vs $126 \pm 9/76 \pm 6$). Cholesterol levels decreased for all treatments with significant dose-dependent within-pair differences for LDL-cholesterol. None of the other parameters showed significant changes or consistent trends. Concluding, the study confirmed the antihypertensive and cholesterol-lowering action of Olive leaf extract in humans.

respectively. A **significant reduction of triglyceride level was observed in Olive group**, but not in Captopril group. In conclusion, Olive (*Olea europaea*) leaf extract, at the dosage regimen of 500mg twice daily, was similarly effective in lowering systolic and diastolic blood pressures in subjects with stage-1 hypertension as Captopril, given at its effective dose of 12.5-25mg twice daily.

PMID: 21036583 [PubMed - as supplied by publisher]

Hypoglycemic and antioxidant effect of oleuropein in alloxan-diabetic rabbits.

1. Life Sci. 2006 Feb 16;78(12):1371-7. Epub 2005 Oct 19.

Al-Azzawie HF, Alhamdani MS.

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Patients with diabetes mellitus are likely to develop certain complication such as retinopathy, nephropathy and neuropathy as a result of oxidative stress and overwhelming free radicals. Treatment of diabetic patients with antioxidant may be of advantage in attenuating these complications. Oleuropein, the active constituent of olive leaf (*Olea europaea*), has been endowed with many beneficial and health promoting properties mostly linked to its antioxidant activity. This study aimed to evaluate the significance of supplementation of oleuropein in reducing oxidative stress and hyperglycemia in alloxan-induced diabetic rabbits. After induction of diabetes, a significant rise in plasma and erythrocyte malondialdehyde (MDA) and blood glucose as well as alteration in enzymatic and non-enzymatic antioxidants was observed in all diabetic animals. During 16 weeks of treatment of diabetic rabbits with 20 mg/kg body weight of oleuropein the levels of MDA along with blood glucose and most of the enzymatic and non-enzymatic antioxidants were significantly restored to establish values that were not different from normal control rabbits. Untreated diabetic rabbits on the other hand demonstrated persistent alterations in the oxidative stress marker MDA, blood glucose and the

antioxidant parameters. These results demonstrate that oleuropein may be of advantage in inhibiting hyperglycemia and oxidative stress

induced by diabetes and suggest that administration of oleuropein may be helpful in the prevention of diabetic complications associated with oxidative stress.

PMID: 16236331 [PubMed - indexed for MEDLINE]

Further scientifically studies

1. Olive (*Olea europaea*) leaf extract effective in patients with stage-1 hypertension: Comparison with Captopril.

Susalit E, Agus N, Effendi I, Tjandrawinata RR, Nofiarny D, Perrinjaquet-Moccetti T, Verbruggen M.

Phytomedicine. 2010 Oct 29. [Epub ahead of print]PMID: 21036583 [PubMed - as supplied by publisher]

2. Cardiotonic and antidysrhythmic effects of oleanolic and ursolic acids, methyl maslinate and uvaol.

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Phytomedicine. 2004 Feb;11(2-3):121-9.PMID: 15070161 [PubMed - indexed for MEDLINE]

3. Blood pressure lowering effect of an olive leaf extract (*Olea europaea*) in L-NAME induced hypertension in rats.

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4. [A clinical trial of a titrated *Olea* extract in the treatment of essential arterial hypertension].

Cherif S, Rahal N, Haouala M, Hizaoui B, Dargouth F, Gueddiche M, Kallel Z, Balansard G, Boukef K.

J Pharm Belg. 1996 Mar-Apr;51(2):69-71. French. PMID: 8786521
[PubMed - indexed for MEDLINE]

5. [Treatment of hypertension with standardized olive leaf extract].

SHELLER EF.

Med Klin (Munich). 1955 Feb 25;50(8):327-9. German. PMID: 14369600 [PubMed - indexed for MEDLINE]

6. Antioxidant and antimicrobial activities of individual and combined phenolics in *Olea europaea* leaf extract.

Lee OH, Lee BY.

Bioresour Technol. 2010 May;101(10):3751-4. Epub 2010 Jan 27. PMID: 20106659 [PubMed - indexed for MEDLINE]