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Peripheral Nerve Protection of Vitis Vinifera Extract in Diabetes Induced Mice

Division of Endocrinology & Metabolism, Department of Internal Medicine, Chonbuk National University[1]

*Woong Ji Kim[1], Heung Yong Jin[1], So Yeng Kim[1], Ji Hyun Park[1], Hong Sun Baek[1], Tae Sun Park[1]

Background : Vitis vinifera extract(VVE) contains proanthocyanidins(OPC) which has antioxidant and free radical scavanging acitivies, so it has been used for protection against oxidative damage. Antioxidants are well known for therapeutic potential in neuronal damage and have been commonly used in the diabetic neuropathy. In this study, the extract of VVE was evaluated for neuroprotective and neurotrophic effect in diabetes induced mice. **Methods :** Mice were divided into four groups according to the VVE dosage such as controls(n=10), diabetes(n=10), diabetes with 100mg/kg VVE(n=10), and diabetes with 250mg/kg VVE(n=10). After 12weeks, a 3mm diameter area of skin was punch-biopsied from the dorsum of foot. After immunohistochemistry using PGP 9.5 polyclonal antibody, epidermal innervation was quantified as nerve fiber abundance per unit length of epidermis (IENF/mm). **Results :** Daily administration of VVE to diabetes induced mice at doses of 100 and 250mg/kg for 12 weeks protected nerve fiber loss and induced neurotrophic activity compared with untreated mice as following(IENF/mm) : Controls (40.95±5.40), Diabetes (28.70±6.37), Diabetes with 100 mg/kg (41.14±1.12), and Diabetes with 250mg/kg (48.98±7.01) ($p<0.05$). (Figure 1) **Conclusion :** The present study showes scientific support for the therapeutic potential of antioxidant VVE in the peripheral neuropathy, especially associated with diabetes mellitus.

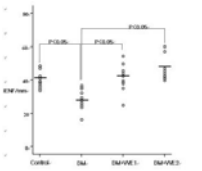

Figure1. Quantification of intraepidermal nerve fiber(IENF) using linear IENF density(IENF/mm) shows neuroprotective effect of Vitis Vinifera Extract(VVE) in diabetes induced mice (DM+VVE1: diabetes induced mice with daily VVE 100mg/kg treatment for 12weeks, DM+VVE2: diabetes induced mice with daily VVE 250mg/kg treatment for 12 weeks).

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The degree of periodontal status and its related factors in Patients with Korean T2DM

Department of Internal Medicine, Department of Dentistry1, College of Medicine, Yeungnam University, Daegu, Korea

*SJ Moon, JS Moon, JS Yoon, KC Won, HW Lee, HK Lee[1]

To provide basic data for developing an oral health management program for diabetic patients by understanding their oral health condition and defining the influence of diabetes on oral health, we performed intraoral examination and questionnaire surveys on 122 diabetic outpatients who visited endocrine department at Yeungnam University in Daegu, South Korea from November, 2005 to February, 2006. The following results were obtained from 93 diabetic patients (out of 122) who have over 20 original teeth. Papillary bleeding index was significantly higher in females($p < 0.05$).Tooth mobility index were lower in a exercising group($p < 0.05$) but there are no significance found among an aging, a smoking and a drinking group. Tooth mobility index, Periodontal index, and Papillary bleeding index were lower as the academic background got higher($p < 0.05$). As the duration of diabetes increased, Tooth mobility index, Periodontal index, and Papillary bleeding index got higher ($p < 0.05$). As the blood sugar level before meal increased, Tooth mobility index, Periodontal index, Russel Index, and Papillary bleeding index got higher ($p < 0.05$) but no significant difference found in a group that had HbA1c over 7%. Multiple regression results show that the duration of diabetes influenced on all the oral health condition which is dependent variables. the duration of diabetes increased, Tooth mobility index, Periodontal index, Russel index, and Papillary bleeding index got higher. And Papillary bleeding index was influenced by monthly income and a diet significantly ($p<0.05$). In conclusion, this study shows that the duration of diabetes influenced on all the oral health conditions significantly. This study also suggests that not only diabetic control but also general oral care should be included in self-management education for diabetic patients and this should be accomplished by appropriate oral health education program and staffs.