Preventative Effects of Chinese Parsley on Aluminum Deposits in ICR Mice

Acupuncture & Electro-Therapeutics Research 28 (1/2) 1-44 (2003)

Preventive Effect of Chinese Parsley (*Coriandrum sativum, Cilantro*) on Aluminum Deposition in ICR Mice

Shigeharu FUKUDA Ph.D., Shinpei USHIO Ph.D. and Masashi KURIMOTO Ph.D.
Amuse Institute and Fujisaki Institute, Hayashibara Biochemical Laboratories Inc., Okayama, Japan
Yasuhiro SHIMOTSUURA , M.D., F.I.C.A.E., Cert. ORT-MD (5 Dan)
O-Ring Test Life Science Research Institute & Shimotsuura Clinic, Kurume, Fukuoka, Japan
Yoshiaki OMURA, M.D., Sc.D., F.A.C.A., F.I.C.A.E., F.A.A.I.M., F.A.S.M.
Director of Medical Research, Heart Disease Research Foundation; President, International College of Acupuncture & Electro-Therapeutics; Professor, Dept. of Non-Orthodox Medicine, Ukrainian National Medical University, Kiev, Ukraine; Adjunct Professor, Dept. of Community and Preventive Medicine, New York Medical College

ABSTRACT

【Purpose】 Environmental exposure to Al may present a serious risk to human because it is the most abundant metal in the Earth's crust. It induces disturbances in the functions of the nervous, osseous and erythropoietic systems (1).

Dr. Omura discovered that the accumulation of mercury in tissues, particularly in cell nucleus, may be one of the main causes of cancer and he found that these metal deposits can be removed by using Chinese parsley and Omura's Selective Drug Uptake Enhancement Method (2-5). We previously reported about the scavenging effect of Chinese parsley on localized lead deposition in animal model (6). In this report, the preventive effect of Chinese parsley on aluminum (Al) deposition in male ICR mice exposed to Al is described.

【Materials and Methods】 Seven weeks old ICR male mice were exposed to 1000 ppm Al as Al chloride in drinking water for 39 days. Administration of Chinese parsley to mice by gastric intubation was performed for 25 days from 14 days after beginning of Al exposure to the end of experiment. After 39 days, the mice were sacrificed for the comparison of Al distribution. The localized Al in various tissues was analyzed by kinetic differentiation mode of HPLC.

【Results】 The total dose of Al given to each experimental group of mice was approximately 200mg. During the experimental period, all the animals gained weight and no differences were found. There were no symptoms of neurotoxicity or other abnormalities. After Al exposure, Al was found to accumulate in the brain, kidney and femur. The highest concentration of Al was observed in the femur. Localized Al deposition in brain was significantly decreased by the administration of

2.4mg/body of Chinese parsley as shown in Fig.1. The similar results were obtained in femur (Fig.2). Surprisingly, Al levels in femur on Chinese parsley administered group were lower than that on control. It was supposed that the metal deposition may be removed by the administration of Chinese parsley.

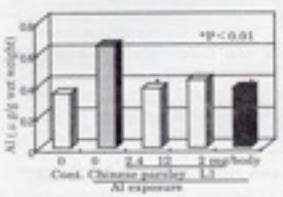

Fig.1 Effect of Chinese parsley on Al concentration in the brain

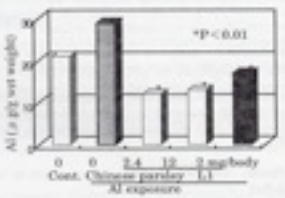

Fig.2 Effect of Chinese parsley on Al concentration in the femur

L-1(1,2-dimethyl-3-hydroxypyrid-4-one) : a chelating agent used for positive control

【Conclusion】 Orally administered Chinese parsley is effective at reducing the deposition of Al in the tissues. These findings suggest the possibility that Chinese parsley may be useful as a natural antidote for Al intoxication.

【References】

1) Długaszek, M., Fiejka, M.a., Gracz yk, A., Aleksanfrowicz, J.C., Slewikowska, M., Pharmacology & Toxicology, **86**, 135-139, 2000
2) Omura, Y., Lorberboym, M., Beckman, S., Acupuncture & Electro-Therapeutics Res., Int J., **20**, No.2, 133-148, 1995
3) Omura, Y., Beckman, S., Acupuncture & Electro-Therapeutics Res., Int. J., **20**, No.3-4, 195-229, 1995
4) Omura, Y., Shimotsuura, Y., Fukuoka, A., Fukuoka, H., Nomoto, T., Acupuncture & Electro-Therapeutics, Res., Int. J., **21**, No.2, 133-160, 1996
5) Omura, Y., Acupuncture & Electro-Therapeutics Res., Int. J., **22**, No.1, 66, 1997
6) Fukuda, S., Ushio, S., Kimoto, T., Kurimoto, M., Shimotsuura, Y., Omura, Y., Acupuncture & Electro-Therapeutics Res., Int. J., 25, No.3-4, 221, 2000

Cilantro

- “Removal and preconcentration of inorganic and methyl mercury from aqueous media using a sorbent prepared from the plant Coriandrum sativum”

  D. Karunasagar*, M.V. Balarama Krishna, S.V. Rao, J. Arunachalam

  (National Center for Compositional Characterization of Materials (CCCM), Bhabha Atomic Research Centre)

  Journal of Hazardous Materials B118 (2005) 133–139