

환경독성

Urine and Hair Metal Concentration in Subjects with Long term Intake of Herbal medicine

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Growing interest in alternative medicine comes in many forms such as herbal medicine, acupuncture, moxa, yoga, vitamins, chiropractic, massage, and etc. Herb is defined as any crude materials that can be prepared for intake. For example, herbs, animal products, and minerals can be prepared into capsules, tablets, pills, decoction, mixtures, and so forth. However, evidences speculate that herbal medicine is responsible for several cases of metal poisoning. So far few systematic studies were performed on this matter and this study aims to clarify the speculation.

Patients selected for this study were receiving treatment for vitiligo and psoriasis and had taken decoction for 1-124 months (mean=7.55 months) and pills for 1-60 months (mean=1.27months). Questionnaires were surveyed for occupation, residence, alcohol, smoking, and etc. Metal measurement in urine and hair was analyzed by Hg ion chromatography and ICP-MS methods at the Center of Nature and Science at Sangji University.

Metal concentrations in urine and hair of the study subjects showed higher than WHO reference concentrations, especially in urine (0.32 - 6.17%) and in hair (11.69 - 26.95%). Cu, Pb in the urine of decoction group and Hg, Pb in the urine (only Pb in hair) of pill group were significantly higher than that of the control group (western medicine and no medication). Regression coefficient (SE) for duration of decoction was -0.001~0.0013 in urine and -0.002~0.0 in hair, and pill use

was -0.012~0.016 in urine and -0.002~0.002 in hair. Odds ratios of decoction were 0.90-2.31 in urine and 0.49-0.76 in hair, and pill use was also 1.52-5.94 in urine and 0.41-1.13 in hair among those exceeded WHO reference values. Results obtained in this study suggest that heavy metal concentrations in the herbs don't necessarily cause metal poisoning and in some cases, showed protective effects.

Keyword: herb, metal concentrations, urine and hair, long-term intake