Kampo for the Urological Diseases

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Kampo is herbal medicine which is constituted mainly of many dried plants and vegetables. Chinese herbal medicine has a long history, more than 5000 years. What is characteristic of Chinese herbal medicine is that it is basically personalized medicine. Prescription has been done not based on the diagnosis of disease, but based on the patients’ general conditions, body build, energy level, and symptoms. In Japan, introduced Chinese herbal medicine is now organized as individual unique formula, which is over 100. In this article, the usage of Kampo in the treatment of urological diseases is discussed.

Key words: Kampo, Chinese herbal medicine, cancer, urinary dysfunction, testosterone

Kampo with cancer chemotherapy

Case. A 88 years-old female was diagnosed as having bladder cancer.

Figure-1 showed a MRI image of her bladder cancer. Partial cystectomy was performed, although she developed left pelvic node metastasis afterwards with the increase in serum CEA, a tumor marker. Since she was not fit enough to receive chemotherapy, she was prescribed Jyuzentaihoto. 5 months later, her lymph node metastasis disappeared (Figure-2). Jyuzentaihoto is a formula classified as “hozai” which has been prescribed for patients with low energy level by fatigue, loss of appetite, anemia, and night sweat. Several lines of evidence show that Jyuzentaihoto stimulates immunological activities. An experimental study showed that Jyuzentaihoto improved the prognosis of metastatic liver cancer by dose-dependent manner1) (Figure-3). Jyuzentaihoto can be beneficial for patients who receive cancer chemotherapy.

One of the side effects that annoys patients who receive cancer chemotherapy is appetite loss. Rikkunshito is known to stimulate Ghrelin, a peptide secreted from the stomach, which stimulates appetite. In an animal study, Rikkunshito can stimulates the food consumption of aged mice to the level of young mice2) (Figure-4). In a clinical study, Rikkunshito prevented the cisplatin-induced decrease in serum Ghrelin, and maintain food consumption3) (Figure-5). Beside Rikkunshito was

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Figure-1 MRI imaging of bladder cancer

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Left: FDG PET/CT revealed lymph node metastasis in left obturator region. Right: CT scan showed lymph node metastasis disappeared.

**Figure 2**

**Figure 3** Effect of Jyuzentaihoto on the liver metastasis of injected Colon 26-L5 cells (Ohnishi Y, et al: Jpn J Cancer Res, 1998; 89: 206-213)

**Figure 4** Rikkunshito stimulates appetite of old mice (Takeda H, et al: Endocrinology, 2010; 151: 244-252)

**Figure 5** Plasma concentration of acylated ghrelin
In the Rikkunshito-on period (Rikkunshito [+]), no decrease of plasma concentration of acylated ghrelin was observed before and after administration.
effective to lessen cisplatin-induced nausea and vomiting\(^3\) (Figure-6). During chemotherapy, to maintain food consumption is extremely important to prevent side effects, especially, myelosuppression. Rikkunshito is an essential supportive care for cisplatin-based chemotherapy.

**Kampo for urinary dysfunction**

Incidence of nocturia increase as aging. A study in Sweden showed that nocturia > 2 times per night was a significant risk factor for death in men\(^3\). Indeed, the risk of death in men who had nocturia > 2 times per night was 1.9 times higher than all men in the cohort. The underlying cause is that health conditions that could induced nocturia such as heart failure, diabetes, chronic kidney disease, etc. is life-threatening. Goshajinkigan has been found effective for the treatment of urinary function and chronic pain. It is effective to decrease urinary frequency in benign prostate hypertrophy\(^5\) and in overactive bladder\(^6\).

Nitric oxides, gas produced in vascular endothelial cells and nerve cells, decrease as aging because of the injury to the vascular endothelial cells and nerve cells by oxidative stress. Goshajinkigan can increase nitric oxides which ameliorates local ischemia. Goshajinkigan is also shown effective to prevent peripheral nerve injury caused by cancer chemotherapy, such as taxane.

**Kampo for men’s health**

Testosterone is an essential hormone for men’s primary and secondary sexual characteristics. In human behavior, testosterone has a role in adventurous activities, competition, taking risks in decision making, engagement in social activities, decreasing fear. Decrease in testosterone level in adults are defined as late onset hypogonadism, which induce obesity, loss of libido, erectile dysfunction, fatigue, depressive mood, and chronic pains. Recent cohort studies have indicated that low testosterone per se is a risk factor for the death of any causes or death by cardiovascular disease and cancer\(^7\). Most cases of late onset hypogonadism are caused by mental stress since stress affects hypothalamus to inhibit the section of GnRH. Supplementation of testosterone is a standard therapy for symptomatic patients with hypogonadism. However, the over dosage of testosterone could be a risk factor for cardiovascular disease. We performed a single arm clinical trial to see if Hochuekkito, another “Hozai” could increase serum testosterone level. As shown in Figure-7, Hochuekkito did significantly increase serum free testosterone and decreased serum cortisol level\(^8\). Hochuekkito has been shown to increase the activity of NK cells, and has been prescribed for frail elderly whose energy level was low. Hochuekkito is now the first choice for symptomatic patients with later onset hypogonadism.

In conclusions, Kampo formula is quite effective for the treatment of cancer, urinary dysfunction, and men’s health. To be familiar with Kampo formulas would be a prerequisite to conduct personalized medicine.
Reference


4) Asplund R: Mortality in the elderly in relation to nocturnal micturition. BJU Int, 1999; 84: 297-301.


