PREVENTIVE INHIBITION OF A CHINESE HERBAL BEVERAGE ON DIET-INDUCED INFLAMMATION: A HUMAN STUDY

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ABSTRACT
The herbal beverage has been widely used to prevent ‘Shang-huo’ (‘上火’, rising fire) in China and Chinese communities abroad, although its clinical efficacy and physiological/biochemical mechanism remain unclear. Inflammations in gastrointestinal track or mouth has been recognised as a cause or consequence of Shang-huo, which is often induced by high-temperature processed food. In this study, the roasted meat and deep-fried potato chips were used to induce the Shang-huo symptoms in 4 healthy male volunteers. A Canton-style herbal beverage (branded as ‘Wang-Lao-Ji”) was investigated for its preventive inhibition on inflammation, by evaluating the changes in leukocyte and lymphocyte counts and ratios, and inflammation mediators. The blood levels of endotoxin, serotonin and melatonin were accessed. The diet induced some typical Shang-huo symptoms, i.e. thirstiness and throat pain, while up-regulating the number of leukocytes (26.2%), neutrophils (36.3%) and its ratio, the levels of endotoxin (23.8 pg/mL) and serotonin (21.5 ng/mL). The herbal beverage removed the symptoms while inhibited the diet-induced rise in the cell counts and blood levels of inflammation mediators, which implied the preventive inhibition of herbal beverage on inflammation. With the beverage, the increase of endotoxin was eliminated to 6.4 pg/mL, and the serotonin was reduced by 119.3 ng/mL. Furthermore, the herbal beverage notably increased the concentration of serum melatonin. The effects of herbal beverage may attribute to several biochemical interactions, namely inhibition on the synthesis/secretion of serotonin, or increasing the conversion of serotonin to melatonin, easing the inflammation in gastrointestinal track and the reduction of endotoxin intake.

KEYWORDS
preventive inhibition, Chinese herbal beverage, inflammation, serotonin, endotoxin, leukocytes