ISSN: 1813-4890

Study on the effectiveness of prescription food for weight loss in canine traditional Chinese medicine

Pufan Shan [1], Yao Du [1,*] , Wenzheng Wu[2] , Shihao Wang [3] and Chi Wang [4]

[1]School of Acupuncture and Tuina, Shandong University of Traditional Chinese Medicine, Shandong Jinan, 250335, China

[2] School of Pharmacy, Shandong University of Traditional Chinese Medicine, Shandong Jinan, 250335, China

[3] School of Traditional Chinese Medicine, Shandong University of Traditional Chinese Medicine, Shandong Jinan, 250335, China

[4] School of Management, Shandong University of Traditional Chinese Medicine, Shandong Jinan, 250335, China

Abstract

The incidence of overweight or obesity in dogs continues to increase worldwide, and obesity has become the number one killer affecting dog health worldwide. Based on the overall theory of traditional Chinese medicine, Chinese medicine slimming prescription food dialectically analyzes the pathogenesis of dog obesity, and is supplemented by traditional Chinese medicine on the basis of the original ordinary dog food formula, which has obvious effects on the treatment of obesity in dogs. This paper analyzes the effect of prescription food of traditional Chinese medicine on obesity in dogs, and provides a theoretical basis for the development of prescription food of traditional Chinese medicine in the market.

Keywords

Dogs, weight loss, traditional Chinese medicine mechanism, prescription food.

1. Preface

Obesity is a relatively common chronic disease in the world, and in recent years, with the improvement of living standards, the obesity rate of dogs has increased year by year. Obesity poses a greater threat to the health of dogs and can cause complications such as heart disease, diabetes, indigestion, and decreased reproductive function. Therefore, scientific prevention and treatment of obesity has important guiding significance for dog breeding. The main treatments for obesity are drugs, changing poor diets, enhancing exercise, and surgery. However, the compliance of dogs is poor, and it is difficult to change eating habits and enhance exercise, and good results cannot be achieved; Surgery is only suitable for severe obesity and is dangerous. Therefore, choosing to add Chinese medicine that promotes weight loss to ordinary pet food can make dogs lose weight healthily through diet. Most of the obesity in dogs is caused by overnutrition or lack of exercise, when the total energy intake of the body exceeds the consumption, too much of the nutrition is stored in the body in the form of fat, affecting the quality of life of dogs. In the face of the increasing proportion of pet obesity, reducing energy intake has become the main strategy for overweight dogs and cats to lose weight [1].

On the basis of the traditional prescription food nutrition allocation concept, Chinese medicine slimming prescription food is accompanied by different prescriptions with weight loss effects or some traditional Chinese medicines with food elimination, spleen strengthening and dehumidification, providing essential nutrients for dogs while smoothly controlling the weight

ISSN: 1813-4890

of dogs, and has auxiliary therapeutic effects on obesity in dogs, which is conducive to controlling dog weight and preventing related complications. This article will briefly study the effectiveness of traditional Chinese medicine slimming prescription food from the aspects of its development and mechanism of action.

2. The development history of traditional Chinese medicine slimming prescription food

In 1943, Dr. Mark Morris first used the concept of nutrition management to treat Buddy, a guide dog with kidney failure, with good results. As a result, prescription food for pets took shape. Prescription food is a type of pet food with a special formula, which cannot treat diseases independently and needs to be combined with related drugs to speed up the recovery process of pets. As an important branch of the pet prescription food market, weight loss prescription food has emerged in the environment of increasing pet obesity rate year by year. Traditional Chinese medicine slimming prescription food is based on the common ingredients of the original prescription grain, accompanied by traditional Chinese medicines with weight loss effects such as hawthorn and corn whisker, and the application of one grain with multiple diseases is carried out according to the principle of "different diseases and simultaneous treatment".

3. The mechanism of action of traditional Chinese medicine slimming prescription food

Traditional Chinese medicine believes that the causes of obesity include excessive diet, more and less work, spleen deficiency, liver qi stagnation, etc., the basic pathogenesis is spleen weakness, and the disease location is mainly in the spleen and stomach [2]. Chinese medicine slimming prescription food according to the needs of hawthorn, ze laxative, baiju, tangerine peel, lotus leaf and other different kinds of traditional Chinese medicine with weight loss effect, these traditional Chinese medicines can accelerate fat metabolism in Chinese medicine clinically, improve the body's metabolic rate, so as to play the effect of weight loss. Maricels et al[3]. used rabbits as an experimental model to study the effect of rhubarb weight loss compound on rabbit fat metabolism, and the results showed that rhubarb weight loss compound had a significant effect on triglycerides and serum total cholesterol in rabbits. Through research [4,5,6], poria has hypoglycemic effects, blood lipids, cholesterol and other effects; White surgery promotes gastrointestinal emptying; Lotus leaf can reduce the expression of PPAR-γ and leptin in rat adipose tissue, and exert the effect of lowering fat and losing weight. Lin Yuanyuan et al. [7] used tangerine peel, hawthorn and eucommia mixed decoction to gavage rats, and found that it could reduce Lee's index and body weight in obese rats, and regulate the activity of enzymes in the liver and the distribution of microflora in the intestine to achieve lipid-lowering and weight loss.

From the perspective of energy balance, reducing energy intake or increasing energy expenditure can cause negative energy balance, resulting in weight loss. Apoleanocorticogen (POMC) neurons are neurons in the arcuate nucleus (ARC) in the hypothalamic nucleus that have an appetite-suppressing effect, and the neuronal peptide encoded by the POMC gene has an anti-obesity effect [8]. Ma Jian [9] used Pelian ephedra formula to act on obese rats and found that it could intervene in the activity of POMC neurons in rats and play a role in inhibiting obesity. Brown fat (BAT) is an organ with thermogenic functions and is the main source of non-trembling thermogenesis [10]. BAT contains a large amount of decoupled nectin (UCP1, UCP2), which can increase thermogenesis and relatively reduce ATP production, promoting fat

decomposition. Peach pit decoction [11] and astragalus [12] can activate decoupled nectin 1,2, increase fatty acid oxidation, increase heat production and energy consumption, respectively.

4. Summary

In summary, the increasing incidence of dog obesity has become an urgent problem to be solved by endangering dog health. With complex etiology, complex disease, diverse symptoms, multiple organs and metabolic disorders, traditional Chinese medicine slimming prescription food can play the advantages of multi-component and multi-target, and is better than single-flavor drugs, better than single natural extracts, and better than single-target Western medicine treatment methods in terms of overall efficacy. As a special category of the pet food market, pet prescription food has been recognized by more and more doctors as an effective auxiliary role in the treatment of pet diseases. Based on the basic theory of traditional Chinese veterinary medicine, traditional Chinese medicine weight loss prescription food plays an important guiding role in dog obesity through the verification of cell target mechanism, and the market development and application prospect of traditional Chinese medicine weight loss prescription food is broad. At present, there is little research on the mechanism of the use of traditional Chinese medicine slimming prescription food, and then with the help of advanced detection technology, histoembryological detection and diversified clinical experiment verification, we can deeply analyze the scientific theory of traditional Chinese medicine differentiation and traditional Chinese medicine matching, and combine more accurate and curative effect of traditional Chinese medicine slimming prescription food that is beneficial to pets, so as to better exert its effect of lowering fat and losing weight.

References

[1] LIU Fenghua. Research progress on the application of commercial weight loss prescription food for pets[J].China Animal Health,2020,22(11):62-63.)

[2] LIN Tong, LIU Min. Chinese Journal of Basic Medicine of Traditional Chinese Medicine, 2021, 27(06):1036-1040.)

[3] MA Liqin, GENG Guangrui, SUN Xiumei. Effects of rhubarb weight loss compound on fat metabolism in rabbits[J].Heilongjiang Animal Husbandry and Veterinary Medicine,2009(03):107-108.)

[4] YOU Xin, XIONG Dao, GUO Zhibin, SHANG Youjian. Research progress on various chemical components and pharmacological effects of poria[J].Journal of Anhui Agricultural Sciences, 2015, 43(02):106-109.)

[5] WANG Jing,ZHANG Shiyang,SHENG Yongcheng,AUO Hui. Research progress on the pharmacological effects of white surgery in the treatment of gastrointestinal diseases[J].Chinese Journal of Traditional Chinese Medicine,2018,36(12):2854-2858.)

[6] LI Maomao, HUANG Xinyuan, LIANG Qiankun, LI Yunxia, JIAO Yuan, TIAN Zhifeng, QIU Xiaoqing, ZHANG Xiaowen, SONG Qing, LI Hongfang. Effect and mechanism of lotus leaf water extract on lipid metabolism in experimental obese rats[J].Chinese Journal of Applied Physiology,2017,33(05):476-480.)

[7] Lin Yuanyuan, Xiong Yitao. Effects of eucommia, hawthorn and tangerine peel decoction on weight loss and lipid reduction in nutritionally obese rats[J].China Contemporary Medicine, 2018, 25(17): 20-23+28.)

[8]Morton G J et al. Central nervous system control of food intake and body weight.[J]. Nature, 2006, 443(7109) : 289-95.

[9] MA Jian. Clinical evaluation of Pelian ephedra formula in the treatment of obesity and its effect on leptin signaling pathway in obese rats[D].Heilongjiang University of Traditional Chinese Medicine,2014.)

[10]Lidell M E and Betz M J and Enerbäck S. Brown adipose tissue and its therapeutic potential.[J]. Journal of internal medicine, 2014, 276(4) : 364-77.

ISSN: 1813-4890

[11]Sung Yoon-Young et al. Dohaekseunggi-tang extract inhibits obesity, hyperlipidemia, and hypertension in high-fat diet-induced obese mice.[J]. BMC complementary and alternative medicine, 2014, 14(1) : 372.

[12]Mengjiao Hao et al. Huang-Qi San ameliorates hyperlipidemia with obesity rats via activating brown adipocytes and converting white adipocytes into brown-like adipocytes[J]. Phytomedicine, 2020, 78 : 153292-153292.