Blank group and saline group, bFGF and bFGFmRNA have little expression, while the saline group with prolonged treatment time, bFGF protein expression gradually weaken and gradually lower than the control group, the control group in the first week of bFGF and both bFGFmRNA a small amount of expression, but there was no blank group and saline group significant difference (P>0.05), the first three weeks when there is significant expression, there are significant differences (P<0.05) compared with the control group, to 6 weeks with a blank and saline group has significant difference (P<0.01).

Guanxinning not only has the role of blood circulation and also has the effect of Bushenzhuanggu by experimental observations. At each time point as the extension of duration of bFGF and bFGF-mRNA expression also gradually enhanced significantly.

Therefore, we speculate that Guanxinning are similar to other traditional Chinese medicine (TCM) for activating blood circulation, also can through the expression of bFGF promotes the regeneration of blood vessels to promote bone repair.

References:

1.Lafforgue P. Pathophysiology and natural history of avascularnecrosis of bone. Joint Bone Spine, 2006,73 (5): 500-507.

2 .Jones LC, Hungerford DS. Osteonecrosis: etiology, diagnosis, and treatment. Curr Opin Rheumatol, 2004,16 (4): 443-449.

3.Levasseur, R. Mechanisms of osteonecrosis. Joint Bone Spine, 2008,75 (6):

639-642.

4. Powell C, Chang C, Gershwin ME. Current concepts on thepathogenesis and natural history of steroid-induced osteonecrosis. Clin Rev Allergy Immunol, 2011,

41 (1): 102-113.

5.Lieberman JR, Berry DJ, Mont MA, et al. Osteonecrosis of the hip: management in the 21st century. Instr Course Lect, 2003,52: 337-355.

6. Shen Lin Lin Yanping Wang Yongjun orthopedic experimental study [M] Beijing: Beijing Science and Technology Press .2005: 434.

7. Li Yafei, Zhang Jing reviewed. Into the regulation of fibroblast growth factor on bone and bone repair. Chinese Journal of Experimental Surgery, 1995; 12: 381.

8.Meller Y, Kestenbaum RS, Mozes M, et a1.Mineral and endocrine metabolism during fracture healing in dogs.Clin Orthop, 1984; 187: 289.

MECHANISM STUDY ON THE ANTI-INFLAMMATION, ANTIOXIDANT AND ATTENUATING NEURONAL APOPTOSISEFFECT OF DANGGUI-SHAOYAO-SAN.

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Abstract: Danggui-Shaoyao-San (DSS) is a famous Chinese herbal formula, which has long been used for pain treatment and has been demonstrated to possess and anti-depressant effects. In addition, it has been widely used in the treatment of various cognitive diseases. This paper reviews the mechanism of DSS on the anti-inflammation, antioxidant and attenuating neuronal apoptosis effect of DSS for the treatment of Alzheimer Disease (AD).

Keywords:Alzheimer disease; traditional Chinese medicine; anti-inflammation; antioxidant; neuronal apoptosis

Anti-inflammation,Antioxidant

Previous studies have shown that DSS produces antidepressant-like effect in rodents. This study shows that the antidepressant-like activity of DSS is probably mediated by the modulation of central monoamine neurotransmitter systems and the reduction of oxidative stress.[1] Moreover, the renoprotective effects of DSS in STZ-diabetic rats not only were attributable to regulate plasma glucose to attenuate AGEs expression in diabetic glomeruli but also likely reflected its antioxidant activity.[2] DSS significantly reduced the expression of the IL-1beta, IL-6, TNF-alpha mRNA, and the level of the NO depressed the neuron apoptosis in the hippocampus.[3] Treatment with DSS had significant analgesic effects on ETM-induced pain through attenuated the Fos and Iba-1 levels at POD 1, which was accompanied with inhibition of both neuronal and microglial activation.[4] DSS was a useful therapeutic agent for short- and long-term inflammation induced pain, through both anti-inflammatory and suppression of central sensitization mechanisms.[5]

Treatment for cognitive impairment

A downstream pathway for DSS induction of melatonin synthesis in the rat pineal gland acts via cyclic AMP-dependent cascade and transcription mechanism.[6] DSS mediates the modulation of central monoamine neurotransmitter systems and ameliorates dysfunction of the central cholinergic nervous system and scopolamine-induced decrease in ACh levels. DSS improves the function of the dopaminergic, adrenergic, and serotonergic nervous systems. DSS can alleviate cognitive dysfunction of Alzheimer's disease (AD) patients.[7] JD-30 is one of the chief active fractions extracted from DSS by its ability to ameliorate deterioration of cognition, and by blocking and disrupting the aggregation of Abeta so that synaptic

plasticity was improved.[8] JD-30 improves deterioration of spatial learning and memory in the SAMP8 mouse model, and by decreasing the content and deposition of Aβ, neuronal activity and synaptic plasticity improve.[9] A better absorption of paeoniflorin in rats of the VD than in normal group was observed through orally administrating with DSS, which is helpful for the treatment of VD.[10] DSS could ameliorate deterioration of cognition in SAMP8, especially in female animals. Increasing E2, NO, and glycine might contribute to the cognitive improvement effect of DSS in female SAMP8.[11]

Reference

[1] Huang Z, Mao QQ, Zhong XM, Li ZY, Qiu FM, Ip SP. Mechanistic study on the antidepressant-like effect of danggui-shaoyao-san, a chinese herbal formula. Evid Based Complement Alternat Med. 2012:173565.

[2] Liu IM, Tzeng TF, Liou SS, Chang CJ.Beneficial effect of traditional chinese medicinal formuladanggui-shaoyao-san on advanced glycation end-product-mediated renal injury in streptozotocin-diabetic rats. Evid Based Complement Alternat Med. 2012:140103.

[3] Zhong S, Ma S, Hong Z, Jin X. Anti-inflammation effect of danggui shaoyao san on Alzheimer's diseases. Zhongguo Zhong Yao Za Zhi. 36(22):3155-60.

[4] Li H, Gu Z, Wu L, Xia L, Zhou K, E L, Wang D, Kou J, Liu H.Danggui-shaoyao-san, a traditional Chinese medicine prescription, alleviates the orthodontic pain and inhibits neuronal and microglia activation.Chin Med J (Engl). 127(20):3630-7.

[5] Yin JB, Zhou KC, Wu HH, Hu W, Ding T, Zhang T, Wang LY, Kou JP, Kaye AD, Wang W. Analgesic Effects of Danggui-Shaoyao-San on Various "Phenotypes" of Nociception and Inflammation in a Formalin Pain Model. Mol Neurobiol. 53(10):6835-6848.

[6] Qu HG, Cheng SW, Tian RB, Li ZL, Lei WL, Wang HQ, Yao ZB, He HW.Effects of the aqueous extract of the Chinese medicine Danggui-Shaoyao-San on rat pineal melatonin synthesis. Neuro Endocrinol Lett. 29(3):366-72.

[7] Fu X, Wang Q, Wang Z, Kuang H, Jiang P. Danggui-Shaoyao-San: New Hope for Alzheimer's Disease.Aging Dis. 7(4):502-13.

[8] Hu ZY, Liu G, Yuan H, Yang S, Zhou WX, Zhang YX, Qiao SY. Danggui-Shaoyao-San and its active fraction JD-30 improve Abeta-induced spatial recognition deficits in mice.J Ethnopharmacol. 128(2):365-72.

[9] Hu ZY, Liu G, Cheng XR, Huang Y, Yang S, Qiao SY, Sun L, ZhouWX, Zhang YX. JD-30, an active fraction extracted from Danggui-Shaoyao-San, decreases β-amyloid content and deposition, improves LTP reduction and prevents spatial cognition impairment in SAMP8 mice. Exp Gerontol. 47(1):14-22.

[10] Liu J, Wang JS, Kong LY. Comparative pharmacokinetics of paeoniflorin in plasma of vascular dementia and normal rats orally administrated with Danggui-Shaoyao-San or pure paeoniflorin. Fitoterapia. 82(3):466-73.

[11] Huang Y, Hu ZY, Yuan H, Shu L, Liu G, Qiao SY, Sun L, Zhou WX, Zhang YX. Danggui-Shaoyao-San Improves Learning and Memory in Female SAMP8 via Modulation of Estradiol. Evid Based Complement Alternat Med. 2014:327294.

EVALUATED STUDY ON THE LETROZOLE AND ENDOTOXIN(LPS) —INDUCED MODEL OF POLYCYSTIC OVARIAN SYNDROME DUE TO KIDNEY DEFICIENCY-BLOOD STAGNATION IN RATS

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[Abstract] Objective:To establish rat models for the study of polycystic ovarian syndrome due to Kidney Deficiency-Blood Stagnation by using letrozole and endotoxin(LPS)，and evaluated them comprehensively.Methods:Sixty SD female rats aged six weeks were divided into two groups ,including experimental group of fifty rats and control group of ten rats.Rats were administered letrozole combined with LPS to induce PCOS model.Firstly,the rats in the experimental groups received intragastric administration of letrozole (1mg/kg）for 21 days.After the evaluation, the successful experimental ratsreceived injection of bacterial endotoxin (LPS)（2.5 mg/kg）for four weeks.The changes of morphology, body weight, estrous cycle, ovarian morphology , histology and serum levels of sex hormones, inflammatory factors, blood lipids, blood coagulation and hemorheology in rats were observed.Results:The weight gain of PCOS experimental rats was higher than that of control group($P < 0.05$).Vaginal epithelial cells lose cyclical changes. Serum sex hormone (LH, T), fasting insulin (INS) concentration was higher than that of the control group($P < 0.05$), serum sex hormone (FSH, E2) level was lower than the control group ($P < 0.05$).After LPS injection, rats showed weight gain slowed, reduced activity, fur lose luster, dry nails,foul stool, dark purple tongue, thickened and enlarged sublingual vein.Experimental group rats serum triglyceride (TG), low density lipoprotein (LDL), high-density lipoprotein (HDL) levels were higher than control group ($P < 0.05$), total cholesterol (TC) is significantly higher than control group ($P < 0.01$);Experimental group rats serum interleukin 6 (IL - 6), tumor necrosis factor (TNF alpha), c-reactive protein (CRP) concentration were higher than control group ($P < 0.05$);Experimental group rats plasma thrombin time (TT), fibrinogen (FIB) content is higher than that of control group ($P < 0.05$), prothrombin time (PT), partial prothrombin time (APTT) there was no statistically significant difference ($P > 0.05$);Rate of platelet aggregation in the rat model of experimental group is higher than thecontrol group ($P < 0.05$), whole blood viscosity, plasma viscosity were significantly higher than that of control group ($P < 0.01$).The ovaries of experimental rats seemed paler，larger and polycystic,histology showed less granular cell layer，thickened albuginea together with proliferated mesenchymaovarian .In the control group, the color of the ovary was red and the surface was smooth.Conclusion:letrozole and endotoxin(LPS)-induced model of polycystic ovarian syndrome due to Kidney Deficiency-Blood Stagnation in rats is successful.