

INTERVENTION EFFECTS OF SCROPHULARIA NINGPOENSIS HEMSLON SPLEEN DEFICIENCY SYNDROME RATS BASED ON METABONOMIC RESEARCH

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Objective: The digestion and absorption of food and water liquid is closely related to the spleen function in theory of traditional Chinese (TCM). The main symptoms for spleen deficiency syndrome with dampness include eat less, abdominal distension, diarrhea, body burnout even edema. In this study, we explore the treatment role of *Scrophularia ningpoensis* Hemsl on spleen deficiency syndrome rats with dampness in metabonomics, analysis biomarkers and metabolic pathways based on liver metabonomic research. Meanwhile, we have pharmacodynamic attribution analysis to the metabolic pathways of *Scrophularia ningpoensis* Hemsl, which is significance to the development of new therapeutic effects of *Scrophularia ningpoensis* Hemsl and to solve the clinical edema disease.

Methods: The high fat low protein diet plus swimming with a load attached to the body for 8 weeks to establish spleen deficiency rat model. SD rats are divided into blank group, model group, high dose group and low dose group. The high and low dose of *Scrophularia ningpoensis* Hemsl decoction was doubled and four times according to the equivalent dose of human. The blank group and the model group were given the same volume of normal saline. ELISA kits are used to detection some biological indexes such as D-xylose excretion rate, serum albumin, blood fat, gastric emptying. Intraperitoneal injection are used to evaluate water load index. In addition, UPLC-Q-TOF-MS was employed to analyze metabolites in liver tissue. Principal component analysis (PCA) and partial least squares discriminant analysis (PLS-DA) were adopted to get the differential metabolites.

Results: compared with the model group, gastric emptying rate and D-xylose excretion rate in the high dose group were increased significantly; contents of serum albumin and total protein in the low dose group were increased; contents of low density lipoprotein-cholesterol, total cholesterol and water load index in the high dose group were decreased. A total of 21 biomarkers were identified and 7 major metabolic pathways were found, which mainly related to the insulin secretion, purine metabolism, bile acid secretion and so on.

Conclusion: Treatment of *Scrophularia ningpoensis* Hemsl on rat model with dampness stagnancy due to spleen deficiency is connected with improving the digestive function, inhibition of glucose metabolism, improving blood lipid metabolism and so on.

Key words: *Scrophularia ningpoensis* Hemsl ; spleen deficiency syndrome with dampness; metabonomics; biomarkers; Metabolic pathway

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WHITE MUSTARD TUFANG EFFECTS OF DIFFERENT DRUG RESISTANCE TO GUINEA PIG ASTHMA

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Abstract Objective : To assess the therapeutic effect of different forms of administration of white mustard tufang on bronchial asthma. **Methods:** Asthma were revealed in guinea pig by using albumin method with application of injection and atomization inhalation, according to references. After modeling, the model guinea pigs were randomly divided into model group, extract group, extract non-acupoint group, powder acupoint group, powder non-acupoint group. Eight unmodified guinea pigs were used as normal control group. Acupoints choose Ojo, bilateral Feishu and bilateral Shenshu, non-acupoints choose Feishu and Shenshu points next to open 1 cm Department. The patients in the treatment group were treated with 6 hours daily and treated every other day for 7 times. The normal group and the model group were given normal saline. To observe the general condition of guinea pigs, the morphology and number of mast cells. **Conclusion:** the different forms of white mustard tufang can reduce the number of mast cells in BALF and inhibit mast cell degranulation, reduce airway inflammation symptoms, control or delay the onset of asthma, in which the extract is good, acupuncture point is better than non-acupuncture point.

Key words: asthma; mast cells; white mustard tufang

Objective White mustard tufang has been used in clinical practice for treating asthma. However, little is known in regards to the therapeutic effect of different forms of administration of it on bronchial asthma. In order to investigate the difference of this on mast cell in BALF, we chose to establish a asthma model with guinea pig.

Material and methods **Materials:** Adult male guinea pigs (weight 200±20g). Albumin (derived from egg white). White mustard tufang (Mustard Seed, Corydalis, Kansui, Asarum).

Methods : Asthma were revealed in guinea pig by using albumin method with application of injection and atomization inhalation, according to references[1]. After modeling, the model guinea pigs were randomly divided into model group, extract group, extract non - acupoint group, powder acupoint group, powder non - acupoint group. Eight unmodified guinea pigs were used as normal control group. Acupoints choose Ojo, bilateral Feishu and bilateral Shenshu, non-acupoints choose Feishu and Shenshu points next to open 1 cm Department[2]. The patients in the treatment group were treated with 6 hours daily and treated every other day for 7 times. The normal group and the model group were given normal saline. To observe the number of mast cells in BALF[7,8].

Results and discussion

Tab.1 The influence of different kinds of forms of administration on the number of mast cells ($\pm s$, n=8)

group	the number of mast cells	degassed percentage (%)
control	15.17 \pm 2.32	16.48 \pm 2.36
extract -acupoint	16.67 \pm 2.73## $\Delta\Delta$ ■	18.13 \pm 2.90## $\Delta\Delta$ ■
powder-acupoint	22.67 \pm 4.37**## $\Delta\Delta$	23.53 \pm 2.92**## $\Delta\Delta$
extract-non-acupoint	23.50 \pm 4.23**##	28.86 \pm 7.27**##
powder-non-acupoint	35.67 \pm 6.95**	40.51 \pm 4.65**
model	37.67 \pm 5.72**	43.72 \pm 3.21**

Note : Compared with the control , *P<0.05, **P<0.01 ; Compared with the model , #P<0.05, ##P<0.01 ; Compared with acupoint with same dosage form, Δ P<0.05, $\Delta\Delta$ P<0.01 ; Compared with the model , ■P<0.05, ■■P<0.01.

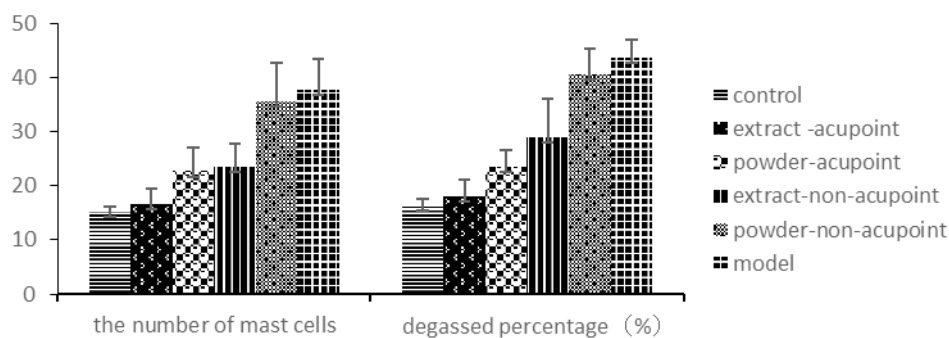


Fig.1 The influence of different kinds of forms of administration on the number of mast cells

It was noted that the mast cells morphology of each group are as follows: control (larger and round); model (small and rupture); powder non-acupuncture points and model group is roughly the same; other groups of the above situation have different degrees of improvement.

The number of mast cells and degassed percentage (%) in BALF was higher than that in the normal group (P < 0.01). The number of mast cells in the alveolar lavage fluid of the other treatment group was lower than that of the model group (P < 0.01). The above phenomenon was significantly lower in the group (acupoint group and acupoint group) (P < 0.01). The above points were lower than those of acupoints (group of ointment and dressing group) (P < 0.01).

Our experiment showed that the extract is best, acupuncture better than non-acupuncture points. We speculate that the relative specificity of acupoints may be the associated substance.

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RESEARCH PROGRESS ON DIHYDROQUERCETIN

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Abstract: Dihydroquercetin is an important anti-tumor element in the treatment of cancer and cardiovascular and cerebrovascular disease prevention and treatment have important applications. This article from three aspects of dihydroquercetin is reviewed in detail in this paper. We through the study of structural characteristics dihydroquercetin and its pharma-