

Effect of Schisandra Chinensis Baill Distilled by Ethanol on Ageing Mice Model Induced by D-galactose

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ABSTRACT: Objective: To observe the effect of Schisandra Chinensis Baill distilled by ethanol on brain organization in aged mice model induced by D-galactose. Method: Injecting 5% D-galactose saline solution in neck back to the subcutaneous of mice to make the laneuria mice model for 40 days. From the 11th day, respectively fill the mice with big, small dosage of Schisandra Chinensis Baill distilled by ethanol, Naokangling troche and the same dosage of saline everyday. The other one was set up the blank comparing group which hyodermicing saline in the scruff. To the end of model last, decapitated brain of mice, re-admission 1/2 of the brain fastened by formalin, taking 1/2 of the remaining of the brain fastened by Glutaraldehyde and observed by organization pathology and electron microscope. Results: Compared with the model group, big, small dosage of Schisandra Chinensis Baill distilled by ethanol groups could both improve the nerve cell, and shows some relativity to dosage. Conclusion: Schisandra Chinensis Baill distilled by ethanol could improve pallium nerve cell, pectin cell and hippocampi nerve cell of mice

KEYWORD: Schisandra Chinensis Baill distilled by ethanol; D-galactose; laneuria; brain organization.

1 GENERAL INSTRUCTIONS

With increasing aging of the elderly, brain neurotransmitters and neurotransmitter receptors in certain brain regions of varying degrees of reduction has become a common phenomenon, neurotransmitters and brain cells to protect against damaging factors of abuse, one of which is one of the important ways to give play to the role of puzzle. Schisandra warm Pickle, lung, kidney, heart, sweating with fluid, astringent fine diarrhea, Anshen effect. Modern research shows that Schisandra has a good role in the regulation of central nervous system pharmacology, sedative, hypnotic, etc., preliminary studies show Polysaccharide [1] has antioxidant effect. To further explore the pharmacological characteristics of Schisandra chinensis, the purpose of this study was to observe the effects of the alcohol extract on D- galactose induced brain aging model mice brain tissue, in order to find out more about the clinical effect of Schisandra chinensis.

2 MATERIALS

2.1 Animals

KM male mice, whose weight were 18 ~ 21g, were supplied by the Experimental Animal Center of

Henan Medical Experimental Animal Center
(Animal permit number: yu NO.0038)

2.2 Drugs and reagents

Schisandra, Purchased from Henan Province, medicine company, for Magnoliaceae Schisandra Schisandra Chinensis Baill dried ripe fruit; Schizandrol mention parts, made of coarse particles Schisandra dry, take 1000g, respectively, eight times the amount of 95%, 95% ethanol extract two times the combined alcohol extract twice, waving alcohol, concentration caused by dry, too extract 298.2g, extract equivalent per gram of crude drug 3.34g; Kangnaoling, Liaoning Tianlong Pharmaceutical Co, lot 20030804, specifications 0.363g / piece ; 95% ethanol (medical grade); D- galactose, Shanghai Reagent Factory, batch number 20030809; Formaldehyde, Shanghai Solvent Plant, Lot 20030417; 25% glutaraldehyde, Shantou City, Guangdong West Long Chemical, lot 0307121 .

2.3 Instruments

Microscopes, electron microscopy.

3 METHODS

3.1 Animal grouping

Take about 18 ~ 21g of 50 mice, half male and half female, were randomly divided into 5 groups (male and female the cage), were randomly divided into the blank group (BG), model group (MG), Kangnaoling group and alcohol extracts of Schisandra large and small dose groups, which can also be called as the alcohol extracts of Schisandra in LS and SS, respectively.

3.2 D-galactose induced aging model construction[2-5]

Model group, Kangnaoling group, large doses of alcohol extracts of the group, a small dose of alcohol extracts of group daily subcutaneous injection 5% D- galactose saline solution 0.5mL / 20g (1.25g / kg), the control group was injected the same dose of saline 0.5mL / 20g. Every four days a weight meter, said adjusted dose, continuously to 40 days D- galactose. The first 11 days from the beginning, were fed large and small doses of alcohol extracts of Schisandra suspension (0.4g / kg, 0.2g / kg, taking the extract with 0.5% CMC dubbed 20mg / ml, 10mg / ml, 0.2ml / 10g), Kangnaoling slice suspension (0.7g / kg, with a 0.5% CMC dubbed 35mg / ml, 0.2ml / 10g) daily. Blank control group and model group was given the same volume of saline freely feeding, drinking pure water.

Table 1. experimental groups cortical neurons and glial cells in mice comparing density ($\bar{x} \pm s$)

group	n	Dose (g/kg)	Observations	Cortical neurons (Vv)	Glial cells (Vv)	Hippocampal neurons (Vv)
BG	10		30	36.42±12.36**	6.7±0.3**	13.6±2.6**
MG	10		30	11.78±21.43	1.7±0.6	6.3±2.2
Kangnaoling group	10	0.7	30	20.19±28.11	3.4±0.8**	8.1±2.8*
the alcohol extracts of Schisandra in LS	10	0.4	30	24.36±18.32*	4.6±0.8**	8.7±2.9**
the alcohol extracts of Schisandra in SS	10	0.2	30	29.78±16.41**	4.8±0.4**	9.8±2.3**

**Compared with the model group, said P <0.01

*Compared with the model group, said P <0.05

As can be seen from the table, compared with the control group, cells, glial cells and hippocampal neurons in the cerebral cortex nerve Vv model mice were significantly reduced, indicating that brain aging model made successful; Ministry of model group and hippocampus brain cells damage main pathological changes in the nerve cells into nerve cells volume shrinking, reducing cytoplasm, vacuolar changes occur within the cytoplasm; dendrites, axons decreased or disappeared; significantly reduced glial cells. Compared with the model group, Kangnaoling groups, large and small doses of alcohol extract of Schisandra parts group

3.3 Determination of biochemical markers

To modeling after the end of the mice brains were removed, get a brain half with 10% formalin-fixed, the remaining half of the brain to do with glutaraldehyde-fixed tissue pathology and electron microscopy. Cortex cells and glial cells, nerve cells in the hippocampus part of the impact observed schizandrol mention parts of mouse neural.

4 METHODS STATISTICAL ANALYSIS

Number figures consecutively in the order in which reference is made to them in the text, making no dis Data were analyzed using windows statistical software SPSS 13.0. The differences of measurement data between groups were analyzed using ANOVA.

5 RESULTS

Cortex cells and glial cells, nerve cells in the hippocampus part of the impact observed schizandrol mention parts of mouse neural.

By experimental methods of nerve cells and glial cells, nerve cells in the hippocampus part of the cerebral cortex of mice in each group were observed, the results are shown in Table 1.

were improved in mice cerebral cortex neurons and glial cells, nerve cells in the hippocampus part, and with a certain degree of dose -related sex.

6 DISCUSSION

D-gal aging model D- galactose principle is triggered by non-enzymatic glycosylation reaction in the body, damage the normal physiological function of biological macromolecules, and the reaction products of advanced glycation end products (AGEs) -induced free radicals injury, further

amplifying the effect of non- enzymatic glycation caused. Mice injected D- long- galactose, can cause systemic metabolic disorders, resulting in organ function decline. Performance of brain cell membrane damage and other phenomena, these changes with aging in mice similar[6]. Aging is a degenerative brain changes occur in the brain during aging body, meanwhile , has also undergone a brain histology corresponding changes , including changes in cerebral cortical neurons recession, glial cells and neurons in hippocampal structure and function . Slow down brain aging research in recent years, Chinese medicine has achieved some success[7], the paper schizandrol extract anti- aging effects of brain related research .

Jin "Bao Pu "Schisandra" uniforms can rejuvenate, longevity," the record; Ming " Compendium of Materia Medica " record: Schisandra " tonic labor , it is the body Yuet -taek , eyesight " ; prompt Schisandra has a good anti-aging effect . Schisandra has been reported near the site of alcohol extract can significantly improve the learning ability of mice[8], Schisandra lignans, Sch B , Schisanhenol good antioxidant[9], have also been reported to have a good water extract of Schisandra beneficial Chi effect[10]. Our previous studies have shown that Polysaccharide have anti-aging effects, for the full discovery of the pharmacological effects of Schisandra observed schizandrol mention parts of the brain aging model of pharmacological effects. In this study, microscopic observation of brain tissue in mice showed schizandrol extracts can improve cell, glial cells D- galactose degenerative changes made, model mouse cortical neurons and hippocampal nerve cells, can antagonize D - galactose pathology caused by nerve cell damage . Tip schizandrol

extract sites can improve brain cell function in mouse models, while this study for clinical application of brain aging Schisandra prevention and treatment of diseases of the foundation.

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