

ents of death in year. [1] Nowadays beginning popularity of electronic cigarettes, whose manufacturers declare that the electronic cigarette is much safer than usual. But we did not find studies that demonstrate security of the wiper.

Key words: vape, respiratory system, electronic cigarettes

It is known that the composition of the liquid for the electronic cigarette includes propylene glycol, glycerin, ethanol, acetol, propylene oxide, and also nicotine. [2]

Nicotine is a carcinogen, as well as a carcinogenic effect has its metabolite, formed in the tissues: cotinine, as well as two tobacco-specific nitrosamine: N'-nitrosonornicotine (NNN) and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK). The carcinogenic effect of these substances is due to their ability to bind to nicotine acetylcholine receptors on cells of non-nervous origin [3], whereby a number of pathological pathways are triggered in the cell that disrupt the normal functioning of the cell and lead to mutations.

Also, substances contained in a liquid of electronic cigarettes, such as propylene glycol and glycerin, are oxidized in a reel of wiper to propylene oxide, propanal, methyl glycol, acetaldehyde, formaldehyde, acrolein and glycidol which have a carcinogenic / toxic effect. [2] Therefore, the aim of our study was to study the effect of an electronic cigarette on blood and internal organs of rats for 30 days.

**Materials and methods** The experiment was done on non-native rats. Before the experiment, permission was obtained from the local ethical committee and the bioethical commission of the Amur State Medical Academy.

In the experiment, 20 mature male rats aged 6-12 months, weighing 200-300 g, were used. Two groups were created - control and experimental - 10 individuals each. The animals were kept under natural lighting with free access to water and food. Animals from the experimental group were smoked for 30 days, twice a day, the dosage of one smoking was 44 mg / 1 kg. For smoking we used a vape model "JoytecheGo AIO".

For every 10 days, blood was taken from the tail vessels for clinical blood analysis. The animals were killed by the method of cervical dislocation under chloroform anesthesia. The blood of the rats was taken for hematological analysis on the Abacus Junior hematological analyzer. 3 organs (trachea, lungs) were selected from each rat for histological analysis.

During the experiment, one rat from the control group died.

**Result and discussion** Based on the results of experiments, we are not definitely validate harm of smoking of an electronic cigarette for such short period. During the experiment, were made a number of technical mistakes that which led to the receipt of unreliable data.

In the future this study will be continued with and elimination of all the errors in the experiment. There will be an increase in the number of laboratory animals, timing of smoking and increase blood sampling skills.

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## HERBAL MEDICINE LINGONBERRY FOR ALZHEIMER'S DISEASE

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**Abstract** Alzheimer's disease (AD) is a neurodegenerative disease, which is common in the elder people with gradually seriously cognitive impairment and memory loss. Because of the complicated pathogenesis, the mechanism of AD is not explained clearly. Rely on the current level of medical care, AD cannot be cured. It is necessary to develop a new drug to intervene AD in the early phase. Recently, it was reported that some components from lingonberry have effect to retard the aging process in the brain and inhibit the development of neurodegenerative diseases. In this paper, we introduce the intervention effect of lingonberry on AD and the mechanism. Key words: lingonberry, Alzheimer's disease, phenolic compounds, oxidative stress

**Introduction** Alzheimer's disease (AD) is a neurodegenerative disease which makes people gradually lose memory and become dementia. The effective drug treatment of AD was anticholinesterase, but only 12% patients accept treatment because of the high cost. Lingonberry (*Vaccinium vitis-idaea* L.) widely distributes in northeast China with abundant resources. Clinical practice has proved that the berries and leaf of lingonberry are beneficial for health. It has many pharmacological actions, including anti-inflammatory, antioxidant and preventing cardiovascular disease.[1] In this article, we introduce the intervention effect of lingonberry on AD.

**Active components of lingonberry** In fruit of lingonberry, phenolic components are the major components. There are 28 kinds of phenolic components, and most of them have an excellent antioxidant effects. Proanthocyanidins (PC) is the most significant active compounds of lingonberry. Some bioactive flavonoids, arbutin, hyperoside and quercetin, also existed in the stem and leaf. Besides, there are 10 kinds of organic acids, 19 kinds of free amino acids and many triterpenoids.[3]

The effects of active compounds from lingonberry on AD There are several hypothesis of AD including oxidative stress and the loss of the cholinergic neuron. Researchers found that the extract of lingonberry has effects on the cognitive disorder, and they want to know whether lingonberry can intervene AD in the early phase. Via comparing some biochemical indexes associated with the oxidative stress injury such as SOD and acetylcholinesterase (AChE), they found that the extract can improve the learning ability and the cognitive disorder induced by chronic stress.[4] PC, the main component from

lingonberry, can prevent the cells from apoptosis induced by HNE that can induce the nerve cell apoptosis under the presence of oxidative stress by reducing the accumulation of ROS. Besides, PC also can control the neurovirulence of A $\beta$ , and the suitable concentration of PC can dissolve aggregation of A $\beta$ . It proves that PC can control the development of AD in a certain extent. [5] Except PC, other components also have effects on AD. It was reported that quercetin have beneficial effects on nervous system. According to the quercetin administration on a triple-transgenic AD model mice, the intervention effects on AD was obtained by observing the neuropathological manifestation of AD. [6] A research about hyperoside on AD showed that hyperoside can prevent neurite injury and control the mitochondrial dysfunction induced by A $\beta$ 25-35. [7]

**Results and discussion** In this paper, we introduce the effects of different components from lingonberry on it. Based on related literature review, we found that the components of lingonberry, PC, quercetin and hyperoside, have effects on AD. These components may product mechanism by enhancing the activity of mice brain cells antioxidant stress, reducing oxidative stress injury and inhibiting the AchE activities. Comparing with the drugs approved by FDA, lingonberry has a cheaper cost and more abundant source. Lingonberry may become a new drug to intervene AD in the early phase.

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### CLINICAL APPLICATION STATUS ON IMMUNE SYSTEM OF TRADITIONAL CLASSICAL FORMULA-ZHIBAI DIHUANG PILL

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**COjective.-C** To provide basis and reference data for the clinical application and pharmacological research of Zhibai dihuang pill. **Methods.-C** The data and information from related literature prove the clinical effect of Zhibai dihuang pill, including research thought, method and progress. Introducing the ideas, methods and progress of clinical effect on Zhibai dihuang pill by dig into the related literature published in recent three years. **Results.-C** This paper summarizes the research progress of the Zhibai dihuang pill's effect on antidiabetics, regulation hormone, and immune regulation. **Conclusion.-C** the zhibai dihuang pill could cure various diseases caused by fire excess from yin deficiency, and adjust the level of the index factors associated with disease.

**keywords:** zhibaidihuang pill, clinical application

Zhibaidihuang pill consists of Anemarrhena, phellodendron, Radix Rehmanniae Preparata, Fructus Corni, peony bark, Chinese yam, Poria, Alisma, it could cure treatment of hyperactivity of fire due to yin deficiency, such as hot flashes sweating, dry mouth and sore throat, tinnitus, spermatorrhea, short red urine and other symptoms. it summarized as follows.

#### Immune regulation

**1.1 improve immune function** Zhibaidihuangwan can improve immune function, including the treatment of allergic purpura, prostate cancer and colorectal cancer. Liu Xueqiang found Zhibaidihuang pill has good curative effect on allergic purpura. Yu Xiujuan compared the clinical indexes with the observation group and the control group, including the level of serum immunoglobulin (Ig A, Ig G), urine routine. The treatment group improved the level of serum Ig A, Ig G level, the routine urine red blood cell count (RBC), white blood cell count (WBC), RBC and WBC HPF, the results show that zhibai Dihuangwan can significantly improve the treatment effect on children with allergic purpura vitiligo. He Xue Dong found that Zhibaidihuang combined with Tacrolimus Ointment can significantly improve skin barrier function in patients of the corticosteroid dependent dermatitis (YDHS). The control group was given Tacrolimus Ointment treatment, the study group was given modified Zhibai Dihuang Decoction Combined with Tacrolimus Ointment treatment. the study group was significantly better of the total efficiency than control group, including grease, TEWL, erythema dose.

Liu Hua observed the clinical curative effect of Zhibai Dihuang Decoction Combined with endocrine treatment and influence of advanced prostate cancer patients with kidney yin deficiency, the control group took endocrine therapy treatment, the combination group took the treatment with the control group added Zhidan Dihuang Decoction, the score of PSA, I-PSS decreased significantly after treatment on the combination group, the total effective rate, reduce the symptoms than the control group, the difference was statistically significant (P<0.01). Chen Hailong investigated effect of Zhibaidihuang pill on bone mineral density and bone metabolism biochemical indexes after chemotherapy, he took the prospective control study method, treated on colorectal cancer patients on stage IV as the research