

## IN THE PREVENTION AND TREATMENT OF CEREBROVASCULAR DISEASE IN CHINESE MEDICINE

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Abstract: In recent years, Chinese medicine in cardiovascular and cerebrovascular disease prevention and treatment more and more clinical attention. Studies have shown that traditional Chinese medicine and its chemical composition has the effect of improving cardiovascular and cerebrovascular diseases, including blood lipid, prevention and treatment of fatty liver, anti-thrombosis, anti-atherosclerosis, heart and brain protection, so as to achieve the prevention and treatment of cardiovascular and cerebrovascular diseases. In this paper, the progress of research on prevention and treatment of cardiovascular and cerebrovascular diseases is reviewed and discussed.

Key words: Cardiovascular diseases; Cerebrovascular disease; Chinese medicine; Summary

Cardiovascular diseases (CVD), is a disease involving the circulatory system, Chinese medicine in the prevention and treatment of cardiovascular and cerebrovascular disease occupies an important position.

### 1. Fall hematic fat

Hyperlipidemia is closely associated with CVD. Serum cholesterol levels were positively correlated with CVD. Danhong injection can significantly reduce the triglyceride, total cholesterol, low density lipoprotein and As index, the prevention and treatment of hyperlipidemia. The results showed that monascus extract could significantly reduce serum TC, TG and LDL-C levels in hyperlipidemia rats, The contents of total cholesterol (TC), triglyceride (TG) and low density lipoprotein cholesterol (LDL-C) in the serum of model rats were significantly decreased, and the levels of serum high density lipoprotein cholesterol (LDL-C) (HDL-C) level, with good blood lipid effect.

### 2. Antithrombotic

The results showed that *Eupolyphaga sinensis*, grubs and earthworms could significantly dissolve rabbit ear vein thrombosis, which significantly enhanced the fibrinolytic activity in rabbits. Proliferation is widely used in the Agkistrodon antithrombotic enzyme by activating the body fibrinolytic system, reduce plasma viscosity, speed up blood flow.

### 3. Anti-atherosclerosis

Atherosclerosis (AS) is the arterial wall of various inflammatory damage to the inflammatory proliferation reaction, overreaction is developed as a plaque. MacKinnon et al [1] found that citrus pectin inhibited galactoside-3 (gal-3), reduced ApoE and gal-3 double knockout mice late atherosclerotic plaque, and reduce atherosclerosis hardening.

### 4. Myocardial protection

Chenpi has anti-myocardial ischemia, myocardial infarction, myocardial injury and so on. Hesperidin, Hesperidin and its derivatives can be anti-myocardial apoptosis, inhibition of coronary angiogenesis and migration in myocardial injury, cardiac remodeling, myocardial ischemia, myocardial infarction have shown a good effect. Hesperidin reduces the apoptotic cell ratio, caspase-3 and caspase-9 activity, to achieve anti-cardiomyocyte apoptosis and cardiomyocyte injury protection [2].

### 5. Brain protection

Dried tangerine peel in the brain, such as brain protection, cerebral ischemia - reperfusion injury protection and improve motor awareness and other effects [3]. Experiments show that puerarin, salvia injection, Chuanxiong injection can increase the blood circulation of brain microcirculation, of which the most obvious effect of Salvia injection.

### 6. Anti-inflammatory

The main active ingredient of the anti-inflammatory effect of the tangerine peel is the flavonoids, including the dihydrogen flavonoids and the polyoxoflavones. Daidzein protects against focal cerebral ischemia-reperfusion injury by reducing the expression of inflammatory cytokines TNF- $\alpha$  and IL-1 $\beta$ .

### 7. Anti-oxidation and scavenging free radicals

The hydrolyzate residue of the tangerine peel has an antioxidant effect and is positively correlated with total phenolics, flavonoids.

### 8. Analysis and outlook

Traditional Chinese medicine is widely distributed, rich in resources, low side effects, great potential for development and utilization, and thus its anti-cardiovascular and cerebrovascular effects in-depth study has a very important theoretical and practical value. In addition to the prevention and of cerebrovascular disease in Chinese medicine, through the compatibility of the compound can also play a synergistic effect.

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UDC 615.451:612.014 DOI 10.22448/AMJ.2017.3.101-102

## ANTIOXIDANT PROPERTIES OF CONVULVULUS ARVENSIS IN ADAPTATION OF ORGANISM TO COLD

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**Summary.** Numerous studies conducted in recent years, it is shown that the mechanism of the effect of environmental factors on a living organism, in particular, with the adaptation of warm-blooded organism to cold, there is a common pathogenetic link – excess production of free radicals. Perspective is an experimental study on the use of natural antioxidants derived from medicinal plants of the Amur region. In experimental conditions the possibility to correct free radical lipid oxidation of rats' organism membranes was studied with the oral introduction of the tincture of herb convulvulus that contains the complex of natural antioxidants. The application of the mentioned tincture in the conditions of oxidative stress induced by the influence of cold leads to the stabilization of the processes of peroxidation against the increase of antioxidant system activity.

**Key words:** the tincture of herb convulvulus, cold, oxidative stress, biological membranes lipid peroxidation, antioxidant system.

In recent years intensively studied the issues of increasing resistance of the organism to a state of hypoxia, which in one way or another initiates the development of many diseases and accompanies them, as well as develops as a result of influence on an organism of various extreme factors. Out our earlier studies have shown that exposure to low temperatures on warm-blooded organism increases the rate of tissue consumption of oxygen, necessary for energy supply, the increased heat production that is the cause of development of hypoxia, stimulating the generation of reactive oxygen species, initiating the peroxidation of lipids. In turn, the state of the adaptive-compensatory potential of the organism at the cellular level is determined by the capacity of antioxidant defense mechanisms. The extension of the range of disorders of free-radical origin in the conditions of cold exposure, leading to destruction of cells and determine the fate of organ, tissue and whole organism, requires the development of new highly effective antioxidants, specifically applicable to certain units of free-radical oxidation schemes and their rational use. Perspective in connection with the foregoing is an experimental justification for the use of natural antioxidants derived from medicinal plants of the Amur region, in particular on the basis of field bindweed (*Convolvulus arvensis* L.), since the availability of the resource base and the profitability of the technology of production emphasizes the economic efficiency of phytocorrection.

**Materials and methods.** In experimental conditions the possibility to correct free radical lipid oxidation of rats' organism membranes was studied with the oral introduction of the tincture of herb convulvulus that contains the complex of natural antioxidants. The animals were divided into 3 groups and each of them had 30 rats: intact animals which were held in standard conditions of vivarium; the control group in which rats were exposed to cold during three hours daily; the experimental group in which before cooling animals had a daily oral intake of the tincture in a dose of 5 ml/kg. It was found out that in the blood of experimental animals a daily cold exposure during three hours contributes to the increase of lipid hydroperoxides level (by 19 – 20%), of diene conjugate (by 16 – 21%), and of malonic dialdehyde (by 41 – 50%) against the decrease of antioxidant system activity in the blood of intact animals. The introduction of the tincture to rats in the conditions of oxidative stress contributes to the reliable decrease in the blood of lipid hydroperoxides by 9 - 16%, of diene conjugates by 8 – 17%, malonic dialdehyde by 21 - 28% in comparison with the rats of the control group. While analyzing the effect of the tincture on the activity of the components of antioxidant system it was shown that the level of ceruloplasmin in the blood of animals was reliably higher by 10 – 26%, of vitamin E by 18 - 23%, of catalase by 10 - 28% in comparison with the same parameters of the rats of the control group.

So, the application of the mentioned tincture in the conditions of oxidative stress induced by the influence of cold leads to the stabilization of the processes of peroxidation against the increase of antioxidant system activity.

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