

UDC 616.1:616.891:615.322

## PHYTOTHERAPY OF PSYCHOGENIC CARDIOVASCULAR DISEASES

Farkhad Maisovych Melykov

Nikitsky Botanical Gardens – National Scientific Centre  
298648, Republic of the Crimea, Yalta, urban village Nikita  
[f.melikov@mail.ru](mailto:f.melikov@mail.ru)

### Introduction

Disorders of cardiovascular system are one of the main causes of death, reduction of human life expectancy and disability. In recent years a number of cardiovascular diseases caused by psychosomatic pathology has considerably increased. Psychosomatic disorders are particularly widespread among people in highly developed countries. Its frequency ranges from 15 till 60% among population, while 30 – 57% is for patient primary care. According to statistics 1/3 of patients received medical treatment initially have emotional disorders [2]. Classical psychosomatic diseases are: hypertension, bronchial asthma, thyrotocicosis, duodenum ulcer, nonspecific ulcerative colitis, neurodermatitis, rheumatoid arthritis and a number of other diseases [1, 2, 4, 8, 10].

Therapeutic resistance of the most “difficult” cardio patients at hospitals causes further investigation of disease adaptation or psychosomatic disorders and their treatment methods. Cardiologic disorders are more often accompanied by functional disturbance of psychosomatic state, otherwise the most popular somatic pathology with 40-60% from the total number of visits to cardiologists, [3]. Treatment of psychosomatic disorders of cardiovascular system is of urgent importance for medicine today.

### Experience in phytotherapy of cardiovascular system diseases caused by psychogenic nature

Medicinal plants with sedative action play a significant role in therapy of neurosis. Herb infusions or decoctions of single plants as well as mixtures are used to treat neuroticism. Taking into an account patient specifics, degree of his disease, treatment can include individual adjustment of decoction composition, dosage and regime mode. Allowing for a low possibility of side effects, prolonged course cure is actual, that can bring a patient into remission and total patient recovery. This treatment method is applied in medicine very seldom, which is unreasonably. Even preparations from scientific medicine, legalized in pharmacopoeia are ignored [6]. By present domestic and foreign pharmacopoeias have recognized the following medicinal plants with mainly sedative action as completely safe: *Valeriana officinalis* L., *Leonurus cardiaca* L., *Paeonia anomala* L., *Passiflora incarnata* L.; adaptogens with mainly tonic action: *Panax ginseng* L., *Eleutherococcus senticosus* Maxim., *Rhodiola rosea* L., (*Leusea carthamoides* L.), (*Echinopanax elatum* L., *Sterculia platanifolia* L., *Schizandra chinensis* Turcz., *Aralia mandshurica* Rupr. et Maxim.; with mainly vegetotropic action: *L. Grataegus communis* L., *Passiflora*; with mainly antidepressant action: *Hypericum perforatum* L.

Phytopreparations are practically non-habit-forming, don't have side effects if to adjust dosage correctly. It is worth to say herbal remedies and preparations of different type are possible to combine.

Having mild symptoms of neuroticism it's possible to apply the following separate plants by short courses (15-20 days):

1. *Valeriana officinalis* L. Drug rhizomes with roots of *Valeriana officinalis* L. impact on an organism multilaterally; it calms CNS, reduces its excitability level; reliefs spasm of smooth muscle organs, regulates heart activity, impacting mediately through CNS and directly on a muscle and conducting system of heart, stimulates coronary circulation [12, 14, 15, 18, 19]. Preparation of *Valeriana officinalis* L. are applied to treat functional chronic disorders of CNS, neurosis, insomnia, psychosomatic neurotic states [9, 12, 17].

Preparations of *Valeriana officinalis* L. are used as ready tinctures or extract as water infusions.

Valerian tincture: 30-40 drops 3 times a day.

Valerian extract pills: 2 pills 3 times a day.

Infusion recipes:

a) 3 spoons (25g) of crushed root are poured with 0,5 l of boiling water, to leave in a warm place for 5 hours, take warm ½ glass twice a day;

b) 2,5 spoons (20g) of crushed root are poured with 200 ml of boiling water, the infusion is made by a common way; dosage is 2 to 3 spoons 3-4 times a day.

2. Lemon balm (*Melissa officinalis*) herb or leaf. It contains an essential terpenic oil, tannin, bitter substances. It possesses spasmolytic, sedative and analgetic action. Peroral intake of lemon balm infusion improves digestion. It is recommended for those who suffer from migraine, insomnia, undue fatiguability [11]. 10 g of row material (2,5 tablespoons) and 0,5 l boiling water are necessary for lemon balm (*Melissa officinalis*) infusion; dosage is 1 glass 3 times a days.

3. Brandy mint (*Mentha piperita*) leaf. This herb contains an essential oil, mainly monoterpenes and their ethers combined with isovaleric and acetic acids. Leaves of brandy mint also include organic acids, tanning agents, flavonoids, carotene, betaine, hesperidin, microelements (copper, manganese, strontium and etc.) [9,12]. They are widely adopted as sedative, spasmolytic medicine in treatment of stomach and bowels spasms purely or in herb infusions. The way of cooking and intaking is the same as for lemon balm herb.

4. *Gnaphalium uliginosum* herb. This herb contains essential oils, flavanoids and it's enriched with carotinoids [9]. It is used in case of hypertension, gastric ulcer. 15 g of row material (2,5 to 3 tablespoons) are poured with 0,5 l of boiling water, dosage is 1 glass 3 times a days before meals.

5. *Origanum vulgare* herb. It includes an essential oil contained phenol compounds: thymol, carvacrol as well as sesquiterpenes and their oxygen intermediates and geranyl acetate. *Origanum vulgare* is mostly taken to improve peristalsis of gastrointestinal tract, as expectorant, anticonvulsive and sedative remedy. *Origanum vulgare* is included into composition of breast and sudorific tea [5,9,11]. 6 tablespoons of raw material are poured with 0,5 l of boiling water. Dosage is 1 glass 3 times a days, it's recommended to intake with some honey instead of tea.

6. Rhizome and roots of *Polemonium caeruleum*. It contains triterpene saponins, organic acids, resinous substance and lipids. Firstly it was adapted as expectorant because of a high content of triterpene saponins in rhizomes. Later sedative properties of *Polemonium caeruleum* were revealed. Decoctions and infusions with its roots reduce motion activity, reflectory excitability. As to sedative properties of this herb, they are much more effective than *Valeriana officinalis* L. 8 to 10 times [9, 10]. Standard infusion: 6g of row material (app. 2 tablespoons) and 1 glass of boiling water; dosage is 1 tablespoon 3 to 5 times a days after meals.

7. Hop cones. Neurotropic action of galenicals made from hop cones is caused by lupulin in them, which possesses sedative action on CNS. Flavonoids, bitter tastes, hormones and vitamins being in this plant composition make for anti-inflammatory, spasmolytic, antiulcer, hyposensitizing analgetic action of hop cones [9,11,12]. 1 tablespoon of crushed

cones is poured with 1 glass of boiling water, should be infused for 10-15 minutes; dosage is 1 tablespoon twice a day and 2 tablespoons for the night.

8. *Leonurus* herb. It is emphasized with sedative action of CNS, which is much more effective than *Valeriana officinalis*. At the same time it has hypotension and cardiotoxic action [11]. Herbal potion or water infusion of *Leonurus* herb are the most adapted form in medicine. Dosage for herb potion makes 30 to 40 drops three times a days.

15 g (app. 4 tablespoon) of the raw material should be poured with 200 ml of boiling water and infused for 20 minutes;  $\frac{1}{4}$ - $\frac{1}{3}$  of a glass twice a day one hour before meal.

9. Adonis herb. It contains cardiac glycosides of strophanthus group, possesses accumulative, stimulant cardiac function, sedative and diuretic property. It is used in mild cases of cardiac insufficiency and as a sedative remedy [9, 11]. The most wide-spread forms of Adonis preparation are drops (20 to 40 drops) and tableted (1 tablet three times a day). Infusion: 6g of raw material and 1 glass of water. Recommended dosage: 1 tablespoon 3 to 5 times a day.

10. Flowers or fruits of *Crataegus sanguine*. Fruits of this plant contain flavonoids (quercetin, hyperin, hyperosides, vitexin), organic acids (citric, oleanolic, ursolic, crataegus, caffeic, chlorogenic), cartinoids, tanning agent, fixed oil, pectines, triterpene and flavonoid glycosides, sitosterol, choline, vitamins [9]. Practical use is in a form of *Crataegus sanguine* infusion, 30 to 40 drops 3 times a day.

Recommended dosage of flower infusion (1 tablespoon of the raw material is poured with a glass of boiling water): 1 tablespoon 3 to 4 times a day before meals.

11. Roots of *Paeonia anomala*. Such an infusion is prescribed in case of neurasthenic state, insomnia, vegetative-vascular disorders with various etiology. As a result patients note better sleep, the frequency and intensity of headaches reduces, efficiency increases [7,11]. The practical form is a tincture, 30 to 40 drops 3 times a day.

12. *Hypericum* herb. It contains various biologically active compounds and possesses versatile pharmacologic properties. The most active compounds are the followings: flavonoids effecting spasmodically on unstriated muscles of vessels, ureters, bile ducts and bowels. Medicines extract containing shoot vasospasm, especially it concerns capillaries, strengthen capillaries, as vitamin P effects, they stimulate diuresis as a result of ureter walls relief and enhancement of filtration in malpighian tufts [7, 9]. This herb contains hypericin, acting as a catalyst of some intracellular reactions and a factor which controls separate metabolic processes in an organism [5,11,12]. In recent years *Hypericum* herb. has gained its importance as an antidepressant, therefore pharmaceutical industry works out new high-efficiency and standardized medicines contained *Hypericum* herb. By current assessment in Germany percentage of preparation based on *Hypericum* herb made 25% to the total number of prescribed antidepressant. Clinical efficiency of preparations based on *Hypericum* herb has been proved by a great number of controlled investigations, though mechanism and nature of antidepressant action have been still unknown [13,16].

Preparations based on *Hypericum* herb have various action depending on its dosage [11], in our case infusion proportions are 10,0:100,0 (1 tablespoon 4 times a day).

Mediator between central nervous system and viscera is vegetative nervous system. Perceptibility of vegetative nervous system exhibits as under extreme influence as in response to weak emotional stimulators, during adaptation period. Crucial importance mostly consists of durably acting small "bites", so-called "stress-plankton", but less of serious shocks. They exhaust human strength causing chronic pathologic processes.

Emotions of alarm, fear and feeling of defenselessness and waiting for the pain are results of heightened blood adrenalin contain, at the same time affects of anger and fury emerge due to heightened noradrenalin. Emotional stress should be considered in terms of

psychosomatic diseases and as a factor causing “masks” of diseases. Emotional stress is getting more significant in case of ischemic heart and hypertension diseases.

If disorder of cardiovascular system gets aggressive form of disease, caused by psychosomatic factors, treatment course should include herb mixtures mostly.

In case of disorder in cardiac performance accompanied by insomnia, the following herb mixture is recommended: flowers of German chamomile – 10,0 g; flowers of *Convallaria majalis* – 10,0 g; fruits of *Foeniculum* – 20,0 g; *Mentha piperita* leaves – 30,0 g; Valerian root – 40,0 g. The herb mixture is taken as an infusion several times a day. Course of treatment makes 12-14 days.

Relief of internal emotion tension and better sleep can be achieved due to the herb mixture: Valerian root – 15,0 g; hop cones – 15,0g; *Mentha piperita* leaves – 30,0 g; *Leonurus herb* – 30,0 g. Recommended dosage of the infusion is 2 glasses twice a day in the morning and in the evening. Cure makes 12-14 days.

For treatment of psychosomatic disorders of cardiovascular system there are other recommended mixtures of medicinal plants:

1. *Mentha piperita* leaves – 20,0 g; Valerian root – 10,0 g; *Menyanthes trifoliata* leaves – 20,0 g; hop cones – 10,0 g. A glass of this infusion is recommended to take during a day. A course of treatment makes 2-3 weeks.

2. *Mentha piperita* leaves – 30,0 g; Valerian root – 40,0 g; flowers of lily of the valley – 10,0 g; fruits of *Foeniculum* - 20,0 g. Dosage: ½ glass 1 to 2 times a days. A course of treatment makes 2-4 weeks.

3. *Mentha piperita* (leaves) – 30,0 g; *Leonurus quinquelobatus* (herb) – 30,0 g; Valerian (root) – 20,0 g; hop (cones) – 20,0 g. Dosage: 1 to 2 glasses 3 times a day having nerve excitation, irritability, insomnia. Cure makes 3 weeks.

4. Valerian (root) – 25,0 g; *Leonurus quinquelobatus* (herb) – 25,0 g; *Carum carvi* (fruits) – 25,0 g; *Foeniculum* (fruits) – 25,0 g. Dosage: ½ glass three times a day in a case of nerve excitation and tachycardia.

5. Valerian (root) – 30,0 g; *Mentha piperita* (leaves) – 30,0 g; *Menyanthes trifoliata* (leaves) – 40,0 g. Dosage: ½ glass a day in a case of nerve excitation and irritability for 1-3 weeks.

6. *Equisetum arvense* (herb) - 20,0 g; *Polygonum aviculare* – 30 g; *Crataegus sanguine* (flowers) – 50 g. Dosage: 1/3–1/4 glass of the infusion 3 to 4 times a day in a case of tachycardia, irritability and insomnia. Course of treatment makes 10 to 15 days.

7. Valerian (root) – 30,0 g; *Leonurus quinquelobatus* (leaves) – 30 g; *Achillea millefolium* (herb) – 20,0 g; *Achillea millefolium* (fruits) – 20,0 g. Dosage: 1/3-1/4 glass 2-3 times a day in a case of heart pain.

### Conclusion

In the course of research it was carried out a data review about medicinal plants and medicinal herbal teas, used in treatment of cardiovascular diseases, caused by psychosomatic disorders. Modern information about phytochemical plant composition and medicinal effect of their main substances were summarized in this work. There are rational courses to treat various disorders of nervous and cardiovascular systems and a number of unjustly forgotten plants, which can be recommended as components for medicinal herb mixtures. In conclusion it is clear that modern phytotherapy possesses sufficient potential consisting of less-used or unjustly forgotten plants, means and methods for efficient treatment of psychosomatic disorders, underlaid of the most cardiovascular system diseases.

### References

1. *Abramova G.S., Yudchyts Yu.A.* Psykhologiya v meditsine. Ucheb. posobiye. –

M.: LPA "Kafedra – M", 1998. – 272 s.

2. *Berezantsev A.Yu.* Psykhosomatičeskiye i somatičeskiye rasstrojstva (analitičesky obzor, chastj I) // Rossijsky psykhiatričesky journal. – 2001. - № 3. – S. 61 – 69.

3. *Bryazgunov I.P.* Mezhdu zdorovjem i boleznju. – M., 1995. – 224 s.

4. *Gavrylova Ye.A.* Rolj povedenčeskogo tipa A i psykhicheskogo stressa v razvitii ishemičeskoj boleznj serdca, vozmožnosti psykhoprofilaktiki i psykhoterapii zabolevaniya // Kardiologiya. – 1999. - № 9. – S. 72 – 78.

5. *Gammerman A.F., Grom I.I.* Dikorastušchiye lekarstvenniye rasteniya SSSR. – M.: Meditsina, 1976. – 286 s.

6. Gosudarstvennaya farmakopeya SSSR. XI izdaniye, vyp.2 – M.: Meditsina, 1989. – 398 s.

7. *Iordanov D., Nikolov P., Boichikov A.* Phytoterapiya. – Sophiya: "Meditsina i fizkultura", 1972. – 346 s.

8. *Korystov Yu.N.* Emotsii, stress, kurenije, potrebleniye alkogolya i rak – korrelyatsionniye i pričinniy svyazi // Journal VND im.Pavlova, 1997. - № 4. – S. 627 – 657.

9. *Muravjova D.A.* Farmakognoziya. – M.: "Meditsina", 1978. – 657 s.

10. *Selje G.* Kogda stress ne prinosit gorya. – M., 1992. – S. 104 – 109.

11. *Sokolov S.Ya., Zamotayev I.P.* Spravočnyk po lekarstvennym rasteniyam (phytoterapiya). – M.: Meditsina, 1984. – 463 s.

12. *Turova A.D., Sapozhnykov E.N.* Lekarstvenniye rasteniya SSSR i ih primeneniye. – M.: Meditsina, 1982. – 288 s.

13. *Bruneton J.* Pharmacology, phytochemistry, medicinal plants. – Paris: Lavoisier, 1995. – C. 267-270.

14. *Feytag WE.* Bestimmung von Valerensäuren und Valer-enal neben Valepotriaten in Valeriana officinalis durch HPLC. Pharmazeutische Zeitung, 1983, Vol. 269. – P. 2869-2871.

15. *Houghton P.* Herbal products: valerian. Pharmacy journal, 1994. Vol. 253. – P. 95-96

16. *Leathwood PD, Chauffard F.* Quantifying the effects of mild sedatives. Journal of psychological research, 1982. Vol. 17. – P. 115.

17. *Morazzoni P, Bombardelli E.* Valeriana officinalis: traditional use and recent evaluation of activity. Fitoterapia, 1995. Vol. 66. – P. 99-112.

18. *Wagner H, Jurcic K.* On the spasmolytic activity of Valeriana extracts. Planta medica, 1997. Vol. 37. – P. 84-89.

19. *Wagner H, Jurcic K, Schaeffe R.* Comparative studies on the sedative action of Valeriana extracts, valepotriates and their degradation products. Planta medica, 1980. Vol. 37. – P. 358-362.

*The article was received at editors 09.12.2014*

**Melikov E.M. Phytotherapy of psychogenic cardiovascular diseases** // Bull. of the State Nikit. Botan. Gard. – 2015. – № 114. – P. 34-38

The article presents a data review about medicinal plants and medicinal herbal teas, used in treatment of cardiovascular diseases, caused by psychosomatic disorders. Modern information about phytochemical plant composition and medicinal effect of their substances were summarized in this research as well. There are rational courses to treat various disorders of nervous and cardiovascular systems.

**Key words:** cardiovascular diseases, hypertension, psychosomatic disorders, medicinal plants, phytotherapy, biologically active substances.