

APITHERAPY IN TREATMENT OF MULTIPLE SCLEROSIS

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Multiple sclerosis is a chronic, progressive, demyelinating disease, characterized by the multicentricity of the lesions of the nervous system, remanent course, variability of neurologic symptoms. Multiple Sclerosis constitutes 5% of all organic diseases of the nervous system in the structure of morbidity.

Nowadays doctors all over the world apply complex therapy, which includes quite a long list of the expensive medicines. These medicines are not effective enough and characterized by very many side effects.

In our point of view, applying of apitherapy in treatment of Multiple Sclerosis has a lot of substantial reasons and advantages.

Applying of bee venom:

1. In certain doses, holds up the process of demyelination and improves partial remyelination of the nerve fibres.

2. Has a powerful immunocorrective effect manifested in raising of the level of all classes of immunoglobulins (esp. Jg G) and in activation of the immunity control system (with D-8 cells).

3. Improves impulse carrying in nerve fibres.

4. Has an anti-inflammatory antibiotic effect.

5. Works out opioid peptides: endorphins and encephalines.

92% of all patients with the diagnosis M.S. have a DIC – syndrome (disseminated intravascular coagulation). Applying of bee venom regulates blood coagulation. Apitoxines remove damages of vessel endothelium and myelin, decreases autoimmune conflict (mainly in pathogenesis). Many scientists emphasise the role of plasmin as a chemical mediator of the demyelination process. (SIBLEY W.A.)

Bee venom stirs up the fibrinolysis process exactly on the stage of conversion of plasminogene into plasmin. Bee venom furthers exacerbation cupping and makes to avoid applying of corticosteroids, having a great number of contraindications. Increasing of the bee venom dose must be done gradually and individually after biological tests. We recommended to repeat the course in 2-3 months, as well as later in prophylactic programs. Bee venom because of its multi component structure makes possible to influence the whole spectrum of pathological changes. Moreover, there aren't any negative consequences. Bee venom is polyfunctional and possesses universal therapeutic activity.

Apitoxines have effect on basic stages of pathogenesis influencing all levels, from membranes and cell organells to the organs and systems of the organism. Such complex of reactions becomes the factor that is strating the chain of interconnected process.

Chemical composition of bee venom is very complicated: proteins (ferments) – hyaluronidase, phospholipase- A2, acid phosphatase and others; peptides: melitine, apamine, MCD- peptide, serakaline, adolapamin, cardiopep, procaine; biologically active amines, histamine, dopamine (hydroxytyramine), norepinephrine and others.

Melitine possesses the greatest therapeutic activity:

1. *Anticoagulant effect* – on the one hand – it is, coagulant of the straight action, on the other hand it influences indirectly the process of coagulability in participation with physiological inactivators of hemocoagulation. The process of thromboplastinopoiesis is destroyed by means of inactivation of factors I, V, VII, IX, X. The system of fibrinolysis is activated, and aggregation of thrombocytes is suppressed.

2. *Immunostimulating effect*. Because of the treatment by bee venom, the quantity of Ig E AT and later IgG AT is increased, which is kept on the same level for a year. The phagocytic leukocyte activity is also increased. At the same time nonspecific defense mechanisms are activated: complement, lysozym and properdin.

3. *Aniinflammatory effect* – intensifies the synthesis of prostaglandin E1 and E2- aniinflammatory agents. Besides, melitin in small doses possesses membranostabilizing, radio-protecting, vasodilating effect.

The most important property of bee venom (melitin, apamin, MCD-peptide) is the ability to activate hypothalamus-hypophysial-epinephrosis system, that causes strong antiinflammatory effect.

Apamin – the small size of its peptide molecule permits to overcome hematoencephalic barrier. It intensifies the synthesis of biogenic amines: norepinephrine, dopamine and serotonin in brain structures.

Adolapin – has an analgetic effect connected with endorphin-like activity. Antiinflammatory effect is connected with straight influence on the centre of inflammation by oppression of cyclooxygenase.

Secapine and Tertiapine have a moderate sedative effect.

Hyaluronidase possesses ability to resolve quickly hematomas, commis-ures and scars.

Phospholipase- A activates the anticoagulatory influence of melitin and has an antiinflammatory effect.

Cardiopep. SEIN (1981) ascertained its antiarrhythmic effect which is close to β - blockers in 1981. Cardiopep also reinforces the strength of systole and increases the volume speed of coronary blood flow.

MCD- Peptide (or peptide 401) has an expressed antiinflammatory effect and it is more active than hydrocortisone (BILLINGHAM, 1969). The difference within MCD- peptide does not give the syndrome of abolition.

A comparative analysis is presented in the following table:

Synthetic corticosteroids (hydrocortisone)	Bee venom (MCD- peptide)
Steroid diabetes, obesity	Normalization of carbohydrate, protein, fat metabolism
Increasing of AD, edemas, Itzenko- cushing syndrome	Decreasing and stabilization of AD, vasodilatation
Immunodepressant	Immunostimulation
Increasing of coagulability, thrombogenesis	Decreasing of coagulability
Exulceration of stomach and intestine	Antiinflammatory, regenerative effect

During 3 years 1.500 patients have been cured by means of this method. The course of treatment lasts 15-20 days, once in 6 months. In combination with specially worked-out rehabilitation programs directed to restoration of motor functions, we got the following results:

Groups of disablement	Quantity	Degree of improvement
I. Hard movement Disorders, disabled	200	30%
II. Disabled, with non-hard disorders	300	48%
III. Work-abled with light disorders	400	64%
IV. Work-abled with insignificant disorders	600	86%

Besides, applying of bee venom the treatment also includes medicines on the basis of propolis, apilac, pollen, honey which have positive effects on spastic syndrome, decrease convulsion readiness, improve coordination and psycho-emotional state. The treatment passes in the hospital. The course of treatment lasts 10-15 days. It's very important to apply bee venom right and exactly. A great rehabilitation-restorative complex is used, to intensify the effect.

Apitherapy made a big step in the treatment of multiple sclerosis, combining all the best, existing beforehand, and changed patients' attitude to the present problem.