

Vegetative Immunomodulators in Treatment of Cystic fibrosis

Dmitrieva Elena Germanovna*

Town Ivanovo, Russia

*Corresponding author: Dmitrieva Elena Germanovna, Clinical Pharmacist, Sacco's street, Town Ivanovo, Russia, Tel: 8493230398; E-mail: CyriX2003@mail.ru

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Introduction

Mucoviscidosis (MV) or Cystic fibrosis carry the most widespread genetically determined diseases with autosomal-recessive inheritance type, characterised by defeat exocrine glands (sweat, salivary, glands of respiratory system and a digestive path).

Phenotype features of cystic fibrosis

It is shown, that for parents of patients MV, heterozygotic carriers of pathological gene shows high frequency of occurrence of diseases. Respiratory (25%) and digestive (42%) systems [1] is characteristic.

Susceptibility of a respiratory pathology above at mothers of sick children in the presence of mutation F508 and at haplotype's HLA A1B40 (medico-genetic consultation).

At all patients with the revealed fibrous changes [2] the infection takes place *Paeruginosa*. Analyses were made in the Center of hygiene and epidemiology by of Ivanovo.

Infection diagnostics on smell

Honey smell - be not under a delusion, this smell is known to more surgeons so the stick (*Paeruginosa*).

Fetid smell Secret of bronchial glands - its long stagnation in lungs at bronchioles, when bronchial tubes are expanded also their walls are changed, it happens at a congenital pathology at mucoviscidosis, after heavy virus infection and a pneumonia.

Note: Is better for treatment a combination - preparations pharmacological and herbal medicines. Efficiency of such treatment makes - 98%.

Sangvirin suppresses growth and development of a wide spectrum of microorganisms, including clinical strains, possessing high degree of medicinal resistance, including: sort bacteria *Staphylococcus aureus* and *Paeruginosa*. Long passages of microorganisms in the presence of Sangvirin do not lead to development of medicinal stability to a preparation [3].

The action mechanism Sangvirin suppresses bacterial nucleases. The preparation is effective after a 5-day course of reception, nosology was stopped. It is possible to appoint at dysbiosis the intestines caused *Klebsiella*, *Candida*, *Salmonella* and *Schigella*. To appoint it is possible for children from 1 year - 1 tablet a day strictly after meal.

Contra-indications: Ischemic illness of heart, Hyperkinesia, Epilepsy, Bronchial asthma (relative contra-indication).

Microscopic displays broncho-pulmonary aspergilliosis reminds changes at asthma, use of preparations, for treatment of a bronchial asthma therefore is possible. Can be observed bronchoectasis, broncho-centric granulomas or eosinophil pneumonia. For preventive maintenance of these changes by the author of article the preparation which treats, and prophylactically simultaneously is found, level

collateral action of antibiotics, and it's one more plus - does not change resistance to various preparations etiotropic therapies (antibiotics) and on itself Sangvirin does not develop resistance to the above-named bacteria. And also a phytopreparation - Abisil which can be applied to preventive maintenance and at treatment bronchoectasis [4].

Antimicrobial action of a preparation Sangvirin is investigated by a method of serial cultivations in liquid nutrient mediums (it is spent in Institute VILAR).

Pathogenesis of MV

Infectious process at MV is not connected with primary damage cellular and humoral protective systems and has a number of features, including, endobronchial distribution and characteristic bacterial flora: the most frequent activators at MV - *Staphylococcus aureus* and *Pseudomonas aeruginosa*. In the last 10 years the big attention is given *Burkholderia cepacia*, *Haemophilus influenzae*, *Streptococcus pneumoniae* - the last 2 activators are allocated mainly at children till 9 years. It, in turn, leads to synchronisation of a bacterial infection «vicious circle» [5], thus, becomes isolated.

That is to break off now are available Immunomodulators - Derinat - an extract from sea fishes [6]. 5 pricks on 5 ml destroy every day the *S.aureus* authentically and completely (the note of the author). Antibiotics if there is to them a sensitivity only stop its growth, therefore antibiotics to appoint at the given kind are infected not present sense (the note of the author). Otherwise, there will be an infection relapse. At combination together with Sangvirin's or Abisil it is possible to apply therapies ($p < 0,1$).

It is shown, that neutrophil elastase reduces frequency of palpation lashes, aggravating infringement mucociliary clearance at MV [7], that is justified by appointment of vitamins-antioxidants in a kind target therapies (inhalations with vitamin A natural (sea-buckthorn berries oil) - a phytotherapy method).

Others proteinases can play a role in destruction a pulmonary fabric at MV, among them - alkaline proteinase and elastase *Paeruginosa*, intestinal collagenase, macrophage and neutrophil metalloproteinase.

At balance infringement between proteinases and their inhibitors increase of the first can lead to damage epithelial cells by destruction fibronectin's or lashes, that promotes adhesion *P. aeruginosa*. Persisten *P. aeruginosa* at patient's MV leads to development of the big number of specific antibodies, as a result, of which linkage with an antigenic immune complexes [8] are formed. They can be revealed in bronchial glands, a bronchial secret, whey of patients MV. Immune complexes play the important role in immunopathology MV, and their caption correlates with weight of a current of disease. The preparation Sangvirin possesses immunomodulatory action, increasing authentically the general T-lymphocytes, T-helpers, and reducing the Central Electoral Committee. Sangvirin it is capable to make

immunogram's practically ideal, authentically reduces caption Yg M, G, E ($p < 0.01$). Abisil also possesses immunomodular action.

Pathophysiological a consequence of defect of gene MV infringement of function of mucous bronchial glands of the respiratory ways, conducting to increase in production of a viscous bronchial secret is primary.

Cages broncho-pulmonary epithelial in the raised quantities expression intercellular adhesive molecules-1 (ICAM-1) also releases patient's MV common chemo attractant for neutrophils - IL-8 [9].

Working out of preparations – inhibitors is for this purpose necessary to adhesion over which the author now works.

Now intensive studying of a role of corpulent cages of patients MV in inflammation start is spent, as trans membrane regular fiber MV (CFTR - cystic fibrosis transmembrane conductance regulator), representing tsamf-dependent chlorid the channel, is present not only in epithelial, but also and at corpulent cages of patients MV [10]. It demands appointment antihistamine a diet consisting of simple products (the note of the author).

These are such products as:

A black currant, fruits kiwi, a cherry and hips.

A rhizome of ginger, natural antihistamine means, it is possible to accept one more as in crude, so a fried kind.

Such vitamins of group in, as bio oozes, choline and inositol. With these vitamins brown rice, the veal liver, chicken meat, eggs, lentil, an oats and sunflower seeds are rich buckwheat. Irreplaceable acid methionine is necessary for maintenance detoxication for liver function. A lot of methionine contains in eggs, fish, meat and a bird. The preparation Silymarin also supports liver function. With it the sea thistle is rich.

The clinical picture mucoviscidoz's polymorphic also develops of symptoms of defeat of various bodies and the systems expressed in unequal degree.

In overwhelming majority of cases the practising doctor should deal with the mixed form developing of symptoms of defeat of respiratory and digestive systems.

After a birth the weight of a body of patients decreases below norm with some lifting on the average school age. Development of a dystrophy in patients directly is connected with infringement of activity of system of digestion, thus that develops against normal or even the raised appetite [11] is characteristic, that demands change of a diet and inclusion in it - fruit and vegetables (salads to meal) as work activators pancreas, vegetative fibres (the note of the author).

Results of Treatment

In 1 group was children from 8 till 18 years of 10 persons with clinical *S.aureus*, patient's mucoviscidoz's are taken. 2 group - at a combination *S.aureus*, and *P. aeruginosa*. The third group - was control, them treated the standard methods (antibiotics of a wide spectrum of action). Control groups and after treatment remained infection carriers, in some cases concentration *S. aureus* has decreased. Research groups all have been completely cured (bacteriological analyses with the control and immunograms in dynamics).

Processing went the statistic-correlation method, which has proved, that factor of reliability of sample more low $p < 0, 01$. This treatment

facilitates a current most mucoviscidoz's and can be considered as the pathogenetic.

At patients mucoviscidoz's considerable frequency of chronic defeats LOR - bodies - at 67.3% is marked.

The semiology of a respiratory syndrome at mucoviscidoz's (persistent cough, allocation dense secret bronchial glands, intoxication symptoms) blocks clinic sinusitis. Nose polyposes it is possible to consider as a consequence of a chronic inflammation because of change mucociliar the device. Antritis can meet often enough [12], therefore Sangviritrin's - solution for external application by the way for washing gamier bosoms the help a sine-kateters at LOR - the doctor on outpatient reception hours and the house use solutio Sangviritrin's (to do it is necessary cultivations depending on age).

The most constant symptom mucoviscidoz's - cough, which can remain against satisfactory state of health and in the absence of signs of a respiratory infection. Usually cough dry or painful, with difficulty separated secret bronchial glands. At strong cough to drip from a pipette on a root of language of 3-5 drops Abisil's - 2-3 times a day (after meal). Application of inhalations with «Abisil's » is possible (on 500 ml of hot water of 8-10 drops of a preparation), at its inhalation is direct from a bottle or at drawing on a wadded tampon or on a paper napkin.

At mucoviscidoz's damp and dry rattles in lungs, even out of an aggravation of broncho-pulmonary process that demands the fastest introduction inhibitors adhesion in clinical practice MV (working out of the author) are constantly or often listened.

At a part of patients of infringement defecation lead to such complications, as anus cracks and loss of a rectum [13]. The preparation Abisil can be applied at these kinds of complications.

Enzimoterapy

Instead of Kreon's [14] it is possible to appoint the drone rasfruit - liofilizar - Apilarnil, let out in the form of a dragee. Selection of an adequate dose of natural enzymes leads to gradual disappearance of intestinal form MV. By the way, Sangviritrin in tablets cleans and disobeys intestines.

Treatment of MV

Base therapy mucoviscidoz's includes antibiotics for struggle against a pulmonary infection, mucolytics, diluting bronchial secret, enzymes for digestion normalisation, vitamins [15], especially fat-soluble (A).

Salads from grated carrots with walnuts, a natural butter - sandwiches with grain bread and greens - fennel, and parsley are very useful.

Applications of terpens

The considerable quantity terpenes contains in coniferous breeds of trees, in MV walks on a pine pine forest are useful to patients.

Preparation Abisil possesses a wide spectrum of antibacterial activity in the relation gram+ and gram - the bacteria often causing pyoinflammatory diseases.

Sensitive to a preparation have appeared Staphylococcus (*S. aureus*, *S. epidermidis*, *St. saprofiticus*), Streptococcus (*Str. fecalis*), Klebsiellas (*K. pneumoniae*, *K. ozaenae*), Citrobacters (*C. fzeundi*), Enterobacters (*E. cloacae*, *E. aerogenes*), Pseudomonads (*P. aeruginosa*), Serraciis (*S.*

mazescens), *Escherichias (E. coli)* and *Proteum (P. vulgaris, P. mizabilis)*, in cultivation 1:2-1:1000, depending on a species of microorganism. The preparation causes irreversible infringements of a cellular wall and a cytoplasmatic membrane of pathogenic microorganisms, including antibiotic-resistant stamms.

Perniciously these operate terpenoid connections on some kinds of pathogenic mushrooms, including sorts *Candida*.

Immunomodular action

The preparation *Abisil* possesses ability to make active processes phagocytosis, stimulating functional activity neutrofil leukocytes and macrophages, raises permeability of skin and mucous covers for pathogenic microorganisms, improves indicators cellular and humoral the immunity, connected with functioning T- and B- systems. For preventive maintenance of a sinusitis dig in in each nasal course on 1-2 drops 3-4 times a day. For preventive maintenance of antritis a preparation enter in gamier a bosom after its preliminary sanitation.

Pulmozim, as scissors divides chains of a spiral of DNA [16]. In bronchial secret possesses ability to connect antibiotics that reduces their efficiency that it is useful to replace antibiotics with a natural antibiotic – *Sangviritrin*. In some cases *Sangviritrin*, in general, allows to refuse application of synthetic antibiotics.

For is diluted bronchial secret such preparation, as *Gelomirtol* - a mix of essence approaches. *Gelomirtol* - phytopreparation consisting of essence of a myrtle with double purposeful action - antiallergic and expectorant ($p < 0,005$). Its application helps at all kinds of bronchial obstruction (a bronchitis, a bronchial asthma).

It is diverse enough group of patients uniting patients with classical displays MV and young men, considering healthy, the diagnosis which has been established after revealing obstructive azoospermia.

Prominent feature of infectious-inflammatory process in easy adult patients MV is it continuously-recidive current against the proof changes of a bronchial wall generated bronhiolo - and bronchoectazs, extended pneumofibrozs, obstructive and bullez emphysemas [17].

Respiratory ways of adult patients MV much more often, than in children's clinic, are infected *P. aeruginosa* and others multiresistant gram - bacteria. Chronic infection mucoid stamm's *Pseudomonas aeruginosa* is characteristic line of current MV of teenagers and adults, and *Sangviritrin* can help them it is very effective. Frequency of revealing *Paeruginosa* among all age groups at MB makes 67 % of patients, is frequent in a combination with *S.aureus*. In the analysis bronchial secret patients it is sowed only *S.aureus*, therefore in diagnostics standards on MV it is necessary to include definition not specific flor's in bacteriological laboratory - in bronchial secret, in a pharynx, in nasal courses, in urine, in a vagina at women - with sensitivity definition to microflora of antibiotics (the note of the author).

For the last few years the number of the adult patients infected with bacteria not fermenting gramme-negative - *Burkholderia cepacia*, *Stenotrophomonas maltophilia* and *Alcaligenes xylosoxidans* all over the world grows, characterised by plural resistance to antibacterial preparations, herbal medicine connection in standards of treatment MV, which has in the arsenal resistant components to microorganisms - *Sangviritrin*, *Abisil*, *Gelomirtol* therefore is expedient.

Treatment of MV in Adults

The program of active treatment of adult patients should be directed on reduction of expressiveness of major factors of risk of a lethal outcome at MV. This treatment - nutritive the status of the patient, bronchial obstruction and infection respiratory ways *Paeruginosa* - all to well medical influence, since, the more low weigth, the worse forecast MV.

Maintenance nutritive the status: Weight – growth characteristics of the patient are closely connected with expressiveness of a broncho-pulmonary pathology, since. Decrease in weight of a body can be result metabolic reaction to active infectious-inflammatory process in lungs.

Patients with pancreatic insufficiency daily should receive fat-soluble vitamins (A, D, E). Patients with safe function of a pancreas necessarily should receive vitamin E. Water-soluble vitamins are appointed patient MV in the usual preventive dosages recommended to healthy faces of corresponding age.

The drone rasfruit - alternative of replaceable hormonal therapy by enzymes pancreas [18]

Reduction of bronchial obstruction

Degree of bronchial obstruction at MV can lower bronchodilators and mucolytics in a combination with kinesiterapy [19].

Bronchodilators can be and vegetative. For example, *Rotokan* - represents an extract from the plants possessing anti-inflammatory properties and traditionally used in herbal medicine - chamomiles, a calendula and yarrow. The solution for inhalations is prepared by cultivation by 1/2 teaspoons *Rotokan*'s in 100 ml of a physiological solution of chloride sodium. A medical dose: 3-4 ml 2-3 times a day.

At puffiness of a bronho-pulmonary tree it is possible to appoint - glucocorticoid vegetative. They well approach children, but for adults, at times, are irreplaceable (a root extract *Glycerrizae glabrae*, *Glicerram*).

Microbiological aspects of an aetiology and antimicrobial therapy of a bronho-pulmonary infection at mucoviscidozs at adults.

It is observed sinergic mutual relations are noted at *P. aeruginosa*/*Candida* (57 %) and *S. aureus*/*Candida* (50 %), that it is possible to clean *Sangviritrin*'s and *Abisil*'s. Their efficiency authentically above in comparison with schemes antibacterial and antifungal the therapies, which in itself is not combined and irrational absolutely not.

At patients is more senior 20 years infectious process can it is caused *Burkholderia cepacia*, *Stenotrofomonas maltophilia*, mushrooms of sorts *Candida* and *Aspergillus*. However in all age groups of patients MV are in the lead *P. aeruginosa* and *S. aureus* [20]. Microcolonies *P. aeruginosa*, covered alginat, become remote to action of antibiotics, that considerably complicates treatment and worsens the disease forecast. Here just also herbal medicine is useful.

Especially often at children of 8-9 years *S. aureus* likes to migrate on a bronho-pulmonary tree that complicates therapy, and is the indication for appointment of complex therapy - washing - a pharynx and a nose solition *Sangviritrin*'s for external application and tablets *Sangviritrin*'s inside. Feature of appointment *Sangviritrin*'s in tablets is their reception - strictly only after meal - in 20-40 minutes. *S.aureus* it is sensitive to *Sangviritrin*'s. Thus, proceeding from microbiological preconditions, antimicrobial therapy of aggravations of a bronho-pulmonary infection at MV at adult patients should be based on combination application of antibiotics with antistaphylococcal and anti

P. aeruginosa activity (with addition under indications anticandida a preparation - the same Sangviritrin) (Table 1).

Till treatment	After treatment
Concentration <i>S.aureus</i> 10 ⁴ – 10 ⁵	norm
Concentration <i>P. aeruginosa</i> 10 ⁴ – 10 ⁵	norm

Table 1: Results treatment of patients with mucoviscidoz's Sangviritrin.

Alternative pharmacogenetic treatment

It nanophytopreparations, capable to deliver on molecular level in cages biological active ingredients, capable to cure or detain development of illness and its complications.

Natural enzyme - Gelzolin destroys extracellular factin which, like extracellular DNA, is liberated at decomposition neutrofil in

respiratory ways at MV, that increases is viscous-elastic and adgezive properties bronchial secret. Researches have shown, that Gelzolin reduce viscosity bronchial secret MV. It is necessary to work in this direction.

Uniform elements of blood	The raised activation	Chronic stress
Lymphocytes	33.5-45%	<20%
Leukocytes	4 – 6 × 10 ⁹	7-9 × 10 ⁹
Segmentnucleo neutrophils	61	72
Sticknucleo Leukocytes	norm	15
Monocytes	12-15	norm
Eosinophil's	2-3	0
p<0.01		

Table 2: Dependence of uniform elements of blood on a condition of reactions of activation of stress at development of clinical signs of illness.

According to standards of therapy of patients mucoviscidoz's (the European consensus) in the centres mucoviscidoz's the rate of the Clinical Pharmacist is provided.

As treatment MV (mucoviscidoz's) provides application Polypharmacotherapy [21]. Russia is time for passing to new schemes of treatment for a long time. Immunogramms at mucoviscidoz's.

At increase of fraction Yg E more than 500 units, it is necessary to do analysis Yg E on Presence A. Fumigatus (fungus) that will specify on allergic broncho-pulmonary aspergillum at mucoviscidoz's. Here it is already necessary to do Immunogramms 3 levels of complexity.

At mucoviscidoz's is present chronic inflammatory process in bronho-pulmonal to system. It is connected with the expressed infringements in system local bronho-pulmonal protection (decrease in level IgA, interferon, fagocitar functions of alveolar macrophages and leukocytes).

Considering that it is necessary to define Yg A secretor in blood of patients since it reflects defeat system at a broncho-pulmonary inflammation and its control after treatment is better, and also it is necessary to define interferon, on leukocyte to the formula - a phase of stress of an organism. It is necessary for joining of psychosomatic therapy.

Conclusion

- Application of herbal medicine and an aromatherapy at given nosology - is justified.

- Sangviritrin and Abisil - are alternative to many kinds of treatment, and it can be applied, as a monotherapy kind, and in a kind combination therapies.
- New preparations on a basis terpenoid - one of them are developed. Gelomirtol - a phytopreparation consisting of essence of a myrtle with double purposeful action - anti allergic and expectorant.
- It is necessary to spend work on new preparations - inhibitors adhesions.
- To investigate deep cuts of plants for the purpose of extraction and creation - nanophytopreparations.
- At treatment of this disease it is recommended to do in dynamics immunogramms 2 levels of complexity.
- In standards of therapy of patients mucoviscidoz's (the European Consensus)
- In the centres mucoviscidoz's it is provided - the Clinical pharmacist, that It is necessary to introduce and in Russia.
- It is necessary to define Yg A secretor in blood of patients since it reflects defeat system at a broncho-pulmonary inflammation and its control after treatment is better, and also it is necessary to define interferon, on leucocyte to the formula - a phase of stress of an organism. It is necessary for joining of psychosomatic therapy.

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