A method for increasing non-specific human resistance to infectious pathogens of bacterial, mycoplasma, viral and fungal nature in organized teams

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Currently, there are many drugs, methods and means on the market, which causes significant difficulties for doctors and their patients in the formation of rational schemes for the treatment and prevention of various diseases.

At the same time, for many years there has been a method of individual selection, determination of optimal dosages and compatibility of medicinal products with each other. drugs, food additives, homeopathic, homotoxicological agents, food products and many other methods and means from a doctor's arsenal on the basis of biofeedback based on the phenomenon of electropuncture testing (Voll R., 1960; A.V. Samokhin, Yu.V. Gotovsky, 1997).

However, the introduction of this method into widespread clinical practice is hindered by the lack of basic training in the principles of biological and alternative "oriental" medicine and advanced computer technologies, the lack of necessary equipment, as well as the inertia of thinking of many specialists (and sometimes unjustified aggressiveness). And, nevertheless, this direction of medicine exists and is successfully developing both abroad and in our country (R. Voll, F. Kramer, F. Werner, F. Morrel, H. Schimmel, V. Ludwig, E. Holisher , Yu.V. Gotovsky, A.V. Samokhin, L.B. Makhonkina, V.N. Sarchuk, N.V. Sokolova, Yu.V. Snezhinsky, L.N. Lupichev, N.L. Lupichev, I L. Blinkov, V.A. Ivanchenko, O.I. Eliseeva and many others). And as more and more positive results are obtained, i.e. factual evidence,

Particularly valuable for clinicians in the methods of autonomic resonance test (ART) and bioresonance therapy (BRT) is the availability of simulation capabilities, with the help of which it became available to assess the effectiveness of the proposed treatment and / or prevention prior to initiation and monitoring during therapy.

One of the options for the scientific and applied application of the above possibilities of these methods is the development and implementation into practice of a method for increasing a person's nonspecific resistance to infectious pathogens when they enter an organized team and for the prevention of acute respiratory infections, pneumonia, acute intestinal infections among recruits, students, patients of various hospitals, as well as for interrupting the cycles of nosocomial disseminations of nosocomial infections, etc.

A known method of increasing resistance by sanitizing patients from the carriage of pathogenic nasopharyngeal or intestinal microflora by separate or an integrated destination antibacterial, antifungal, sulfa drugs or antiseptics.

The disadvantages of this method are low efficiency associated with the possibility of suppressing the vital activity of normal flora, saprophytes, the development of disorders of microbiocenoses in the form of dysbacteriosis and a decrease in the functional activity of various links of immunity.

Purpose of the study - increased non-specific human resistance to infectious pathogens of bacterial, mycoplasma, viral and fungal nature by the appointment of a monopreparation. Previously, individual testing was carried out using the ART method on equipment and according to the methods of the "IMEDIS" company in the recruits of a number of currently officially registered probiotic preparations. According to the results of positive testing (optimization of integrative indicators - BI, RA, etc., elimination of "dysbacteriosis", "depletion of the immune system", increase in "bactericidal" "lymph" and "blood", etc.), the drug of choice was recognized domestic probiotic "Vitaflor".

The advantage of using "Vitaflor" over the possible similar use of other known probiotic drugs, for example, an analogue - bifidumbacterin and a prototype - lactobacterin, is obvious from the data presented in table 1, which is completely

correlates with the results of testing by the ART method on the equipment of the firm "IMEDIS". Moreover, testing by the ART method in these cases is informative, fast, economically more profitable, and relatively easy to perform.

Table 1

Spectrum and level of antagonistic activity of "Vitaflora" monostrains and known industrial strains of bifidumbacterin (analog) and lactobacterin (prototype)

Test cultures	Zones of growth retardation of test cultures, mm				
	L.acdoiphilus D-75	L.acidophilus D-76	L. plantarum 8R-AZ	B. bifidum No. 1	L. bucneri No. 96
Gram-positive bacteria					
Staphylococcus aureus 209P	> 45	> 50 50		10	thirty
Staphylococcus aureus 236	thirty	> 50	> 50	eight	25
Staphylococcus xylosus 552	> 30	> 50	thirty	10	40
Staphylococcus xylosus 512	35	> 50	> 50	12	> 50
Staphylococcus warneri 514	> 50	> 30	> 50	10	> 50
Staphylococcus saprophiticus 523	40	> 50	fifty	eleven	fifty
Staphylococcus lentus 542	> 50	> 50	> 50	fourteen	> 50
Staphylococcus epidermidis 595	> 50	> 50	> 50	10	> 50
Staphylococcus epidermidis 529	45	> 50	> 50	fifteen	> 50
Streptococcus salivarius 518	45	> 50	thirty	10	> 25
Peptococcus sp. 370	40	25	thirty	10	> 50
Micrococcus kristinae 568	> 25	> 50	> 50	10	> 50
Micrococcus kristinae 500	> 30	> 50	> 50	12	> 50
Criptococcus sp. 505	10	eight	0	0	five
Corinebacterium sp. 503	25	35	thirty	10	0
Corinebacterium sp. 533	> 30	> 35	> 50	10	> 50
Gram-negative bacteria					
Helicobacter pylori 23/5	> 50	> 50 10		0	> 50
Pseudomonas vesiculans 45	> 50	> 50	> 50	10	> 50
Pseudomonas acidovorans 521	> 50	> 50	> 50	10	> 50
Pseudomonas maltophilia 524	> 50	> 50	> 50	0	> 50
Pseudomonas maltophilia 527	> 50	> 50	> 50	0	> 50

Pseudomonas putrefaciens 416	> 50	> 50	> 50	0	> 50
Pseudomonas putrefaciens 519	> 50	> 50	> 50	0	> 50
Pseudomonas cepacia 521	> 5O	> 50	> 50	0	> 50
Pseudomonas cepacia 528	> 50	> 50	> 50	2	> 50
Pseudomonas cepacia 548	> 50	> 50	> 50	3	> 50
Pseudomonas fluorescens 554	> 50	> 50	> 50	2	> 50
Enterobacter agglomerans 525	> 50	> 50	> 50	thirty	> 50
Alcaligenes denitrificans 415	> 50	> 50	> 50	twenty	> 50
Alcaligenes denitrificans 130	> 50	> 50	> 50	25	> 50
Citrobacter freundii 135	> 50	> 50	36	40	40
Serratia marcescens 37	26	> 50	> 50	45	twenty
Acinetobacter anitratus 196	> 50	> 50	> 50	twenty	> 50
Yeast p. Candida					
Candida albicans 531	fifteen	15 10		0	10
Candida albicans 386	10	12	12	0	10
Candida albicans 507	0	0	0	0	12
Candida krusei 168	0	0	0	0	10
Candida tropicalis 233	0	0	0	0	10
Candida pseudo-tropicalis 345	18	24	22	0	10

From the results of comparative studies of antagonistic activity presented in Table 1, the advantages of the strain formula of Vitaflor lactobacilli are obvious in comparison with other industrial strains of bifidobacteria and lactobacilli in general, and on gram-negative pathogenic microflora, and on gram-positive pathogens, as well as on fungi and yeast. Passportized museum strains and clinical isolates were used as test cultures.

Also, according to the method of Yu.V. Gotovsky (exogenous and endogenous adaptive BRT according to the "donor strategy" under the conditions of simulated psychovegetative, infectious-parasitic, environmental loads and other types of burdens on the recruits "donors"), a complex bioresonance drug (BRP) was obtained to stimulate an adequate adaptive response in "average "A newly arrived soldier
given call. The use of such new technologies is more justified than in our opinion, much more a tactic of mere waiting.

Thus, the desired monopreparation for enhancements non-specific resistance proved to be the probiotic "Vitaflor" in combination with BRP.

The set goal of increasing nonspecific resistance was achieved by local and systemic exposure to the probiotic "Vitaflor" and a bioresonance drug (BRP)

(hereinafter referred to as Vitaflor-BRP) according to the worked out scheme, doses and course of application, which ensures effective rehabilitation of patients from pathogenic nasopharyngeal and intestinal microflora, aimed at the formation of a normalized ecology
of human microorganisms, stimulation of normobiosis on mucous membranes, ensuring the functional activity of dendritic cells of mucous membranes, the main antigen-presenting and immunoregulatory cells that determine adequate Th1-, Th2 - types of immune response to infectious pathogens or immunological tolerance without initiating the development of allergic reactions of various types.

During the first 14 days after arriving at the team, newly arrived military personnel receive the probiotic Vitaflor-BRP in the form of 3 forms of application daily sublingually, intranasally and orally:

1) Under the tongue - 4 granules 2 times a day of the complex bioresonance drug BRP and tablet form "Vitaflora" (in the form of standard sublingual tablets containing 2 therapeutic and prophylactic doses of $2x10^{eight}$ colony-forming units of bacteria (CFU) of symbiotic lactobacilli L. acidophilus No. 75 and No. 76) - 1 tablet 3 times a day for the entire course of 14 days.

2) 5 drops of Vitaflora dissolved in water are instilled into each nasal passage 3 times a day, a total of 10 drops 3 times a day for the same 14 days. Intranasal nasal drops are prepared ex tempore: by adding Vitaflora to a standard penicillin bottle with 2 doses ($2x10^{eight}$ CFU in the form of a dry freeze-dried product) 2 ml of boiled water, shaking the bottle closed with a stopper until the lyophilisate dissolves, followed by
intranasal inoculation as described above.

3) Orally on an empty stomach probiotic "Vitaflor" in the form of a lactic acid product functional nutrition (acidophilic milk) containing acidophilic lactobacilli $5x10^{eight}$ CFU / ml of the standard strain formula in the logarithmic phase of growth in a volume of
150.0 ml 3 times a day before meals, also during the specified course of receiving per os for 14 days. The study of the effectiveness of Vitaflor-BRP for the prevention of pneumonia, acute respiratory infections and acute respiratory infections was analyzed in two groups of randomly selected young people aged 18–20 years, totaling 411 people (group 1–195 people and group 2 - 216 people).

All patients from both groups of conventionally healthy people were examined by bacteriological, virological and immunological methods at different times after arrival.

table 2

The effect of Vitaflora-BRP on the reduction of nasopharyngeal and intestinal carriage of pathogens bacterial, mycoplasma, fungal and viral nature

Type of pathogens	Group # 1 with Vitaflor-BRP	Group no. 2 without Vitaflora-BRP	Multiplicity advantages # 2 / # 1
S. pneumoniae	16.6	30.0	1.81
H. influenzae	3.1	26.6	8.58
S. aureus	9.0	19.3	2.14
M. pneumoniae	6.4	8.3	1,3
C. pneumoniae	1.6	1.9	1,2
Viruses	1.6	2.1	1,3
Sandida albicans	1.75	4.2	2.4
E. coli	0,4	2.6	6.5

It was revealed that the proportion of carriage of the main pathogens: pneumococci, Haemophilus influenzae, Staphylococcus aureus, mycoplasmas, chlamydia and viruses (adeno-, RS-, corona-, parainfluenza, etc.) in group No. 1, after the appointment of Vitaflora-BRP, became significantly less, than among the personnel of the comparison group (group No. 2), where Vitaflor-BRP was not received. Thus, the proportion of carriage of pneumococci in the first group was 1.8 times less, Haemophilus influenzae - 8.6 times, Staphylococcus aureus - 2.1 times, M. pneumoniae - 1.3 times,C. pneumoniae - 1.2 times, Candida albicans - 2.4 times; viruses (adeno-, RS-, corona-, parainfluenza, etc.) by 1.3 times, pathogenicE.coli - 6.5 times than in comparison group No. 2.

As a result of non-specific sanitation of patients with Vitaflor-BRP and stimulation in

the functional activity of immune factors of disease resistance, for example, pneumonia among those who received Vitaflor-BRP in group No. 1 was 1.8 times lower (P <0.01) than in the comparison group, the personnel of which did not receive Vitaflor-BRP.

The incidence of acute respiratory infections and acute bronchitis in group 1 was 2.5 times lower than in the comparison group (P <0.001).

The incidence of angina in groups No. 1 was 1.5 times lower than in the comparison group (P < 0.01).

Interestingly, in the study of paired sera obtained in the dynamics of observations during the initial examination and after 1–2 months, it was found that among people who received Vitaflor-BRP, the increase in CGT antibodies to influenza A virus was more significant than among those who did not receive Vitaflor-BRP, and the determination of the level of antibodies to pneumococci among persons who received Vitaflor-BRP, the increase in CGT of pneumococcal antibodies was statistically significantly greater than among those who did not receive Vitaflor-BRP. At the same time, it should be noted that, from our point of view, the use of Vitaflor-BRP according to the claimed method in comparison with the known ones made it possible to significantly increase the body's resistance and protection to infectious and inflammatory diseases due to the following mechanisms:

1. Increase in the affinity and avidity of specific and nonspecific IgM, IgG and IgA antibodies produced after vaccination.
2. Prolonged serum circulation of produced antibodies.
3. Stimulating the functional properties of the completeness of phagocytosis by phagocytes and their precursors - neutrophils from the entire granulocytic series systemically in the blood and locally on the mucous membranes in the bronchi, alveoli.
4. Suppression of not only infectious inflammation, but also immune, inflammation and all constituents of allergic components.

If the patients had pneumonia, the clinical manifestations of the disease in those who received Vitaflor-BRP were easier than among those who did not receive Vitaflor-BRP. The proportion of mild forms of pneumonia among them was diagnosed 1.7 times more often than in the control group. Among those who received Vitaflor-BRP, there were no severe forms of pneumonia and there were absolutely no complications, moreover, the average duration of the disease was 3.7 days shorter.

Thus, it is obvious that with the help of complex of probiotic "Vitaflor" and bioresonance drug BRP according to the proven methods, doses and courses of use in accordance with the claimed method, it is possible to carry out completely safe, absolutely harmless and quite effective stimulation of nonspecific resistance of the human body, based on direct and indirect antagonistic mechanisms of sanitation from pathogenic pathogens of bacterial, viral, fungal and chlamydial nature and phylogenetically developed mechanisms of activation of individual links of human immunity.

Thus, the method allows:

1. To increase the nonspecific resistance of members of an organized group in the period of adaptation to new cramped living conditions, prolonged contacts in confined spaces and in conditions of intense physical, psycho-emotional and stressful loads.

2. Comprehensive immunological examination in the dynamics of observations did not reveal significant quantitative changes in the main parameters of the cellular or humoral links of immunity, but statistically significant (P <0.01–0.005) improvements in the functional activity of macrophages, neutrophils, NK cells (natural killer cells) were registered, potentiation of readiness and induction of synthesis of endogenous leukocyte interferon II type (IFN-gamma) to a level of 300 IU per 1 ml of blood serum,

3. It is quite effective and without side effects to sanitize the nasopharyngeal and intestinal carriage of pathogenic and opportunistic microflora, capable of initiating inflammatory processes, significantly reduce the proportion of nasopharyngeal and intestinal carriage of the main pathogens of acute respiratory infections, tonsillitis, tracheitis, bronchitis, pneumonia and AEI in the structure of pathogenic and opportunistic microflora of bacterial, mycoplasma, chlamydial, and viral nature. Thus, a decrease in the carriage of carriage was recorded by protocol for pneumococci. Streptococcus pneumoniae - 1.81 times; Staphylococcus aureusStaphylococcus aureus - 1.84 times; Haemophilus influenzaeHaemophilus influenzae - in 8.58 times; mycoplasmaMycoplazma pneumoniae - 1.3 times; chlamydiaChlamydia pneumoniae - at 1.2

once; CandidCandida albicans - 2.4 times; influenza viruses, parainfluenza, adeno-, RS- and coronaviruses by 1.3 times; pathogenic formsE. coli - 3.7 times.

4. Directly and indirectly reduce the incidence of pneumonia, acute respiratory infections and intestinal infections by 2.7 times, which corresponds to 270% efficiency in comparison with the control groups - due to the nonspecific local and systemic antagonistic effects on the main causative agents of infectious diseases (see Table 1), nonspecific increase in the resistance of mucous membranes to the adhesion of pathogens and due to the general stimulation of immunity (see table 2).

5. Facilitate and reduce the severity of clinical manifestations and course of diseases respiratory and intestinal infections, if they develop by one or two orders of magnitude, to reduce the number of developing complications with exacerbation of concomitant or layering of other diseases, to reduce the number of hospital bed days, to speed up the process of rehabilitation of patients and their return to active fulfillment of the assigned educational, production or combat tasks ...

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V.V. Sorkin, S.K. Osmolovsky, V.P. Dobritsa A method of increasing non-specific human resistance to infectious pathogens of bacterial, mycoplasma, viral and fungal origin in organized groups // XII