

lus. When comparing the data of somatic status of infants of both groups it was found that in premature infants with low birth weight, as opposed to infants born at term, there was hepatomegaly (22%) and conjunctivitis (16,6%). When comparing the frequency of jaundice in these groups, no significant differences were noted.

The follow-up of this category of infants found that a high incidence of viral respiratory infections during the first year of life (more than 5 times a year; 55,5% in group 1 and 46,6% in group 2) was in both groups. The study of biocenosis as an indicator of immunological resistance of the organism in the study groups of infants showed that in the first year of life in 72,2% of infants in group 1 and 50% of infants in group 2 were impaired qualitative and quantitative composition of intestinal microflora. But allergodermia manifestations which can also characterize the state of immune status occurred less frequently (22,2 and 13,3% respectively).

The estimation of neurological status showed that to 1 year of age the disappearance of clinical symptoms of neurological disorders noted in 61,1% of infants in group 2, while in infants of group 1 remained muscle tone disturbances in the form of muscular hypo- and hypertension (50%) and respectively (22,2%), clinical and instrumental investigations confirmed the signs of hydrocephalus in 16,6% of infants. Thus, from the above it follows that:

- the probability of birth of low weight infants with different terms of gestation and different degree of severity of clinical manifestations in post-natal period from mothers with different types of HSV infection in pregnancy is high;

- in term and preterm LBW infants, the incidence of respiratory diseases in the first year of life is found in half of studied children regardless of gestational age at birth, and neurological symptoms in LBW infants with low gestational age persists over a long period due to morphological and functional immaturity of the central nervous system.

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The work was submitted to International Scientific Conference «Modern problems of clinical medicine», Jamaica, April, 16-26, 2013, came to the editorial office 29.04.2013.

#### THE PLAYERS' CENTRAL NERVOUS AND NEUROMUSCULAR SYSTEMS FUNCTIONS AGE DYNAMICS

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The adaptation, resilience, and physical performance efficiency challenges are occupied the central place in the modern sports, especially in the soccer, for which are characterized not only the huge amounts of the training and competitive physical activities, but also their combination with the hypoxic, exothermic, and the powerful psycho-emotional impacts. So, this is usually accompanied by a lot of the surge of the overstrain and the overexertion, the different organs and the systems injuries and the diseases (e.g. Graevskaya N.D., 1969; Vysochin Yu.V., 1974, 1980, 1989, 2001, 2002; Meyerson F.Z., 1981; Carpman V.L. and et. al., 1988; Meyerson F.Z., Vovk V.E., 1990; Polishkis M.S., and et. al., 1998; Shamardin A.E., 2000; Valeev N., 2000; 2002).

The obvious deficiencies of the Soviet and the Russian soccer players' training system can be traced over the past several decades. On this basis, the clear need is evident to be found the fundamentally new approaches for the efficiency improvement of the soccer players training.

So, the soccer can be characterized, as the activity with the changing conditions of the actions fulfillment, the variable carrying out by the muscular work power at the intensive large amount processing of the extrasensory information. For all this, the physical activities intensity is practically ranged from the moderate to the maximum level during the game. This, moreover, is characterized by the permanent combination of the active actions and the corresponding operations with the brief and short – termed periods of the relative rest (e.g. Suchilin A.A., 1997; Solopov E.N., 1998; Shamardin A.E. and et. al., 1999). Thus, in the soccer, as in all types of the sports, the main criterion for the training system efficiency this or that training system, is considered to be the final result, or the competitive activity success. So, the athletic performance sportive result is practically depended on the many factories: the level of the general and the special physical, technical, tactical, and psychological preparedness of each soccer player in separately and the team, in the whole, that is, the generalized (e.g. integral) of the functional state condition and the functional possibilities of the organism's all the systems, but, most of all, the central nervous and the neuro-muscular systems (e.g. Vysochin Yu.V., 1989; Zolotarev A.P., 1997; Vysochin Yu.V., Denisenko Yu.P., 2000, 2002, 2010; Braginsky A.,

Golomazov S. and et. al., 2001; Berezantzev A., Davydov D., 2002; Vysochin Yu.V., Denisenko Yu.P., Rahma E.M., 2003; Vysochin Yu.V., Denisenko Yu. P., Chuev V.A., 2007).

The modern soccer is different by its steady increased tensions of the training and the competitive activities (e.g. Shestakov M.M., 1995; Suchilin A.A., 1997; Shamardin V.N., 1998; Shamardin A.E., and et. al., 2000; Lyukshinov N.M., 2003). So, in this regard, the need is constantly increased for the radical improvement of the soccer players' training quality, which it is dictated the need to search and find, and finally, to put into the practice more efficient organizational forms, means, and the necessary methods of the educational and training process (e.g. Zolotarjev A.P., 1997, 2000; Lyukshinov V.N., 2003).

So, the extensive scientific research is, simultaneously, conducted in the different and the various directions. First of all, this is the efficient means and the methods further development of the general and the special physical training and, moreover, the soccer players' physical performance efficiency increase at all the stages of the sportsmanship formation (e.g. Sperling K.A., 1974; Zonin G.C., 1975; Kirillov A.A., 1978; Terentev V.F., 1995; Sarsaniya K.S and et. al., 1999; Zaitzev A., Leven V., 2000; Shamardin V.N., 2000 and et. al.).

However, the attention has been drawn to the rather stereotyping approach in all these challenges solution. So, in the overwhelming majority of the studies and the researches, having devoted to the general and the special physical training, having aimed at the further development of the speed and power, the power qualities, the speed, the agility, the speed and the overall endurance and etc., are, mainly, used the whole variety of the physical activities and their combinations. At the same time, up to the present time, the large experience in the use of a number of the non – traditional means has been accumulated in the various types of the sports (e.g. the midlands, the altitude chamber, the hypoxic, the hyperthermic effects and the impacts, the special breathing exercises, the biofeedback techniques, the active self-regulation and the relaxation tricks, and etc.) in the sports training system. So, all these means are impacted and the influenced on soccer players' human body and the organism have been little studied, and, obviously, so, therefore, they are not almost used in the soccer. The myorelaxation or the muscle relaxation was appeared to be the least explored and studied in the soccer players' training system.

We have not met the works in the analyzed literature on the soccer, except for the laboratories research by Yu.V. Vysochin (e.g. Vysochin Yu.V., Alloy L.M., Morozov Yu.A., 1979; Vysochin Yu.V., 1988; Vasquez O., Vysochin Yu.V., 1993; Vysochin Yu.V., Denisenko Yu.P., 2000, 2001, 2002, 2003; Vysochin Yu.V., Denisenko Yu.P., Chuev V.A., 2007), concerning the special relaxa-

tion training of the soccer players. At the same time, it is quite well – known that the myorelaxation or the muscle relaxation, in particular, the skeletal muscles relation rate is no less significant quality, having characterized the neuromuscular system state and the human organism functioning possibilities state, than the contractile muscles characteristics. So, it is quite impossible to be overstated the relaxing muscles functions value in the sports and the labor activities.

Thus, the skeletal muscles relaxation rate is the especially significant one. The study of this challenge has been devoted to this subject of several dissertational theses (e.g. Visochin Yu.V., 1974, 1989; Azbakieva H.A., Shin N.S., 1978; Junayd B.A., 1984; Azhishchenko A.A., 1987; Boldyrev Yu.V., 1989; Levenkov A.E., 1988; Abovyan T.Zh., 2000; Dzhungurova N.V., 2002; Denysenko Yu.P., 2007). The positive effect of the specific exercises, having improved the skeletal muscles relaxation function, on the central nervous system, the visceral organs and the systems activity, the blood circulation rational types formation, the movements coordination, the speed, the endurance, the technical skill, the growth of the special physical health and the athletic performance efficiency at the most different kinds and the types of the sports activity have been proved in them. The researches, having proved the leading role of the muscles relaxation speed in the sportsmen's organism immediate and long – term adaptation mechanism to the large and great physical, the hyperthermal stresses, the resilience to the physical overloads in the mechanisms, the overvoltage prevention, the traumas and the diseases, and as well as in the mechanisms of the host defense of the human organism from the extreme impacts, and the athletes recovery have been especially significant (e.g. Vysochin Yu.V., 1974, 1980, 1988, 2001, 2002; Devyatova M.V., Vysochin Yu.V., 1980; Vysochin Yu.V., Denisov A.A., Lukoyanov V.V., 2000; Vysochin Yu.V., Denysenko Yu.P., 2003, 2011).

So, the age formation regulations and the functional state development of the central nervous and the neuromuscular systems, having played the leading role in the mechanisms of the special physical performance efficiency and the progress of the sports results and the athletic performance efficiency, as well as in the further formation mechanisms of almost all the sports – important qualities of the soccer players have been appeared to be even less studied.

Therefore, the main objective, of our many – year researches, having stated in the Monograph book, the experimental study of the age – related regulations patterns of the anthropometric data development, the functional state of the central nervous and the neuromuscular systems, the individual and personal development types, the functional activity of the physiological mechanisms of the soccer players' human organism adaptation and the protection from their physical overload have been outlined in it.

It should to be noted, that this Monograph, practically, is the first systematic complex study of the functional state age dynamics at the soccer players' central nervous and the neuromuscular systems, at the age from 9 (e.g. 108 months) up to 35 years (e.g. 420 months), which was permitted to be received a number of the absolutely new scientific facts and data. Firstly, it has been established, that the CNS inhibitory processes and the skeletal muscles relaxation rate are made considerably greater contribution to the progress of the soccer players' sports results, in comparison with the excitatory processes, their maximum force, and the muscles contraction rate. Firstly, it has been proved, that all the parameters, having reflected the anthropometric status, the central nervous and the neuromuscular systems state, the long – term adaptation types, the injuries and traumas appearance probability and the power of the protection physiological mechanisms, have their characteristic age dynamics, which is divided into three main types. First experimental evidence has been proven, that the age of 14–16 years is the most critical for the young soccer players, and it, moreover, is required the special methods development of the sports training at this age.

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The work was submitted to International Scientific Conference «Innovative medical technologies», Russia (Moscow), May, 21-24, 2013, came to the editorial office on 29.04.2013.

#### LEVEL SL-SELECTIN IN BLOOD SERUM OF PATIENTS WITH SCHIZOPHRENIA COMORBIDITY PYODERMA

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Pyoderma is one of the most common infectious dermatoses with a frequency of occurrence in the general structure of the skin disease to 43% and 17,3% for patients with mental health [2, 3]. Immunological disorders are one of the contributing factors to the development of pyoderma, including comorbid with schizophrenia [1, 2]. In this regard, the need for more in-depth study of disorders of the immune system in these patients is important.

**Objective.** Study the level of sL-selectin in the serum of patients with pyoderma comorbid schizophrenia.

**Methods.** Clinical and immunological study was performed in 40 patients with pyoderma comorbid with schizophrenia at the age of 18 to 70 years. To measure the level of human sL-selectin (leukocyte adhesion molecule-1) in human serum was used immunoassay method using horseradish peroxidase as the indicator enzyme (Bender MedSystems, Austria).

**Results.** Immunosorbent assay showed that the concentration of sL-selectin were significantly increased in patients with comorbid schizophrenia pyoderma,  $p < 0,001$ . In patients with schizophrenia without pyoderma sL-selectin levels were significantly increased compared with the parameters of healthy and 9,3% was lower than in patients with comorbid schizophrenia pyoderma ( $1569,0 \pm 120,7$ ,  $1423 \pm 126,2$  ng/ml, in patients with pyoderma comorbid schizophrenia and schizophrenia without pyoderma, respectively,  $907,0 \pm 148,3$  ng/ml in healthy). The rise of sL-selectin may be a consequence of activation of neutrophils, which causes an increase in the number of adhesion molecules, and confirms that a compromised immune system are involved in the pathogenesis of schizophrenia, and pyoderma.

**Conclusions.** The results showed that elevated levels of sL-selectin detected in patients with comorbid schizophrenia pyoderma is a risk factor for the development of pyoderma and can be used as a criterion to judge violations of the immune system and to evaluate the effectiveness of therapy in these patients.

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The work was submitted to International Scientific Conference «Innovative medical technologies», Russia (Moscow), May, 21-24, 2013, came to the editorial office on 29.04.2013.