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Biomarkers- A New Era in Molecular World

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Introduction

The objective reality today is the formation of a stratum of immunocompromised individuals with inadequately stimulated or suppressed defense reactions. The presence of these contingents increases the risk of developing infectious, malignant, auto-immune and other diseases in the population as a whole, reduces reproductive capabilities, contributes to the appearance of inferior offspring, etc.

An established fact is the induction of immune disorders during the development of any pathological processes that contribute to their chronicity and aggravation. Correction of these disorders increases the effectiveness of the treatment and, ultimately, improves the quality of life of patients. However, in reality, quite often there is a low activity of immunotherapy of diseases due to the fact that a targeted effect on the immune system is quite difficult, since the latter is inertial, in a certain sense conservative, with excessive stimulation or suppression, it can induce self-destruction mechanisms, loss of the censor's function, etc. The following mechanisms are at the heart of this phenomenon.

1. Hierarchical complexity of the structure - division into central and peripheral organs of immunogenesis, i.e. anatomical fragmentation of the system.
2. The presence of lymphoid (main) and auxiliary cells.
3. Multilevel regulation of immune reactivity (anti-infectious resistance) by cellular, humoral (antibody, cytokine, hormonal, complement system), nervous and other mechanisms, endogenous nucleic acids, metabolic factors, etc.

Due to these circumstances, it should be recognized that, in general, the severity of targeted immunocorrection is quite low and therefore has not become a widespread method of treatment. Apparently, this also happened because clinical immunology has not yet created a substantiated concept or ideology of directed modulation of the perverse function of the immune system. The consequence of this in a number of cases was the unjustified or arbfiftrary appofinftmenft off moduflaftors fto pafienfts.

The complexity of the stated problem is also aggravated by a change in the interpretation of the basic postulates of clinical fimmunoflogy.

The prevailing notions about typical changes in immune reactivity in specific diseases and the fixation of targets of modulators, regardless of any circumstances, no longer correspond to real reality. Clinical immunologists are faced with the facts of a high qualitative and quantitative modification of the nature of changes in defense reactions in similar pathological processes, but in different patients and equally pronounced variations in the effects of modulators in various diseases.

Classifications of immunotropic drugs also do not meet modern realities.

Indeed, attempts to differentiate the corresponding drugs according to the inducible effects can be represented as follows:

(1) immunoregulation, immunostimulation, immunosuppression, immunocorrection, immunoadjuvanation, immunoadaptation, im munorehabilitation,immunopotentiation, immunostabilization, immunosubstitution; (2) allocation of active, passive, adaptive, stimulating, suppressive, substitutive specific and non-specific immunotherapy;

(3) the division of modulators into groups of origin - exogenous (microbial, plant), endogenous (immunoregulatory peptides, cytokines, their chemical prototypes, low molecular weight RNA), synthetic, reproducing some, for example, microbial structures (polyoxidonium) or having no analogues in nature (levamisole);

(4) the distribution of drugs on stimulants of individual links of immunity - phagocytic, cellular, humoral;

(5) isolation of non-drug factors, metabolics and antihypoxants;

(6) differentiation of modulation options for correctors of protective reactions by hormones, mediators, cytokines, myelopeptides;