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Immunologic characteristics in children with behavior disorders resulting from the perinatal cardiovascular lesions

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Abstract
The paper presents the results of the study of the immune status in children with behavior disorders and of the effect of perinatal cerebrovascular lesions on the origin of psychic disorders.

Keywords: immune status, perinatal cardiovascular lesions, behavior disorders.

Introduction
The prognostic criteria for the building of small brain disfunction and later on of various psychic disorders are those of the clinical radiological complex: chronic hypoxia or acute asphyxia and incomplete pregnancy resulting in the periventricular leukomalacia with bilateral lesion of the parietal and occipital lobes in preterm infants or multicystic encephalomalacia in full-terms or infraction or haemorrhage with hypoxic-ischemic cerebrovascular injuries; the third degree haemorrhages or the lesion of the nucleus basalis, necrosis of the brain bridge region (prediction accuracy - 79.1%).

Perinatal haemorrhagic and hypoxic-ischemic cerebrovascular lesions with the rates up to 80-85% in inversely proportional dependence to infant's gestational age (T.A. Gonchar, 1999; Gatze-Kopp L.N., 2013) lead to psychic disorders.

One of the most important for the study of the various types of mental pathology objects is the deviant behavior of children and adolescents from the perspective of borderline neuro-psychiatric disorders of organic origin. The cause is a wide range of manifestations of behavior disorders, by their high frequency, by excessive for these population hardships of the social adaptation.

Now psychiatry has a sufficient amount of material on diagnostics, clinical practices, medical and pedagogical correction of deviant behavior. Clinical experience at home and abroad attests that the real possibility to overcome school and social maladjustment and the correct assessment of the diagnostic value of clinical manifestations of behavioral disorders depend on the timely choice of the rational treatment mode.

Aim
The aim of the research is the in-depth combined study of the immune system of patients with manifest deviant behavior caused by perinatal pathology, the discovery of the prognostic immunological criteria of the therapy efficacy.

Materials and methods
The sample consisted of 43 male patients with perinatal hemorrhagic and hypoxic-ischemic cerebrovascular injuries that developed further into different forms of deviant behavior of the non-psychotic type. The neurosonography has been used to diagnose perinatal cerebrovascular injuries in neonates (in anamnesis) with subsequent employment of CT and MRT methods.

We conducted the combined study of the cell and humoral immunity factors for all 43 patients and further investigated these factors in dynamics. To ensure the results the control group was chosen comprised of 43 mentally and somatically healthy children and adolescents. To the study group that showed persistent deviant behavior the drug dalargin of the small regulatory peptides was assigned. This drug strongly influences the state of the psychic activity developing so a compensatory reaction; strengthens the function of the inhibitory neurons lowering the excitability of the central nervous system. We established that the dalargin therapeutic efficacy was also determined by its function as an immunocorrector for steady therapy resistant behavior disorders. Our data on immunogenesis in the patients group defined above support this conclusion.

The study of the T- and of the so-called T-active lymphocytes in the peripheral blood indicated
that before the treatment children had shown a significant drop in the content of these cells (up to 24.2±0.8% and 22.42±0.69% against 65.81±1.66% 44.42±1.25% in the control group, p>0.05). After therapy, a significant increase in the number of the T- and T-active lymphocytes had been observed which indicated that the T-cells imbalance was corrected. We also discerned that the B-lymphocytes content that was high in children before treatment had recovered to its normal values. So an imbalance in the content of different lymphocytes subpopulations evened – low numbers of the T- and T-active rose as the excess in the B-lymphocytes numbers significantly lowered which tells about dalargin immunomodulating effect.

Taking into account positive therapy influence on the content of different lymphocyte subpopulations in the blood and the changes in the latter's functional activity we can state that the proliferative activity is being considerably modified in response to the T- and B-mitogens. So witnessed earlier significant inhibition of the blast-cell transformation reaction to PHA had not been observed. The proliferative activity restored completely (25.5±3.2% and 59.7±2.1% against 57.23±1.5% in the control group). It's very important to stress the changes in the B-lymphocytes activity. While children showed relative growth in the B-lymphocytes content before the therapy (14.2±0.7% against 8.5±% in the control group), after the dextran sulfate B-mitogen application the proliferative activity halved. Thus, despite their high content in blood functionally these lymphocytes are not self-sufficient.

The investigation shows that along with the imbalance in the content of various lymphocyte subpopulations in the diseased population there also is an inhibition of the functional activity of these lymphocytes. This finding allows us to talk about secondary immunodeficiency affecting both the B- and the T-components of the cell response. Full enough restoration of the B-lymphocytes blast-cell transformation ability in response to the dextran sulfate action denotes the dalargin immunomodulation action. Thus, it's possible to claim that the disorders in the immune system are not irreversible and may be corrected. It's true both for the various subpopulations content and for their functional ability to response to mitogens.

While analyzing the contents of different immunoglobulin classes, we could point out the reduction in the concentrations of all three classes as compared to the control group. Though the valid reduction was observed only for two classes - M and A. After the therapy significant activation of the immunoglobulin synthesizing lymphocytes had been observed. That activation gave great well above the normal growth of the above two classes. So the immunoglobulin M content in blood increased up to 1.32±0.06 while the normal value was 1.18±0.05 (mg/ml), p>0.05. In the control group, it increased up to 1.71±0.07 with the normal value 1.41±0.08 (mg/ml). The immunoglobulin content in the blood rose to control values.

Thus, the secondary disimmunoglobulinemia in children can be completely corrected by the therapy. Probably this also positively affects general reactivity and the resistance to latent viral and bacterial infections observed for the immunodeficiency of such kind. Taking into account the defects in the immune system that were detected in the study group and also analyzing the causes and the mechanisms of development of the secondary immunodeficiency we tried to estimate activity of certain regulatory lymphocyte subpopulations particularly of the so-called indomethacin-sensitive suppressors.

The data obtained show that for the children before the therapy the function of this cell population was not impaired (suppression index - 1.3) however after the treatment the disappearance of the suppressor cells had been observed (suppression index - 0.7). Thereby for this children population the oppression of the cell and humoral indices cannot be directly connected to the suppressor hyperactivity as the activity level of one of the macrophage lymphocytic populations that can synthesize prostaglandin E oppresses
the T-lymphocyte proliferation. The dalargin ther-

apy also facilitated inhibition of this function in
the suppressors (suppression index - 0.7). This
gives an explanation of the dalargin effect on
the immunogenesis, of its influence on the indo-
methacin-sensitive population of suppressors, of
the activation as the result of the immunoglobu-
lin synthesis, and also of the increase in the in-
crease of the lymphocyte proliferative ability for
the mitogens.

The data obtained reflect interrelations between
different immunoglobulin classes and so impli-
cate that the synthesizing antibodies partake in
the humoral immunity. The absence of failures
when switching from the synthesis of one class
of immunogenesis to the synthesis of another
class makes it possible to claim that the changes
in the immune system are of secondary signifi-
cance and are caused by the violations in the
immunogenesis neuroendocrine regulation.

Conclusions
1. Perinatal haemorrhagic and hypoxic-ischemic
cerebrovascular lesions are one of the main
reasons of various psychic disorders.
2. For differential diagnosis of the perinatal cere-
brovascular lesions and to achieve progno-
sis of the hard far-off psychic consequences
it's reasonable to perform neuro radiological
studies of children according to the diagnostic
programs that allow to rise the accuracy of the
diagnosis up to 98.7%.
3. Deep integrated study of the immune system
of the patient with the deviant behavior allows
specifying our knowledge about the patho-
genesis of the psychic disorders whose origin
lies in the perinatal pathologies.

References
1. Гончар О.А., Уралова Л.Т., Пономаренко
Л.М. Інтерпретація основних МР - імпу-
льних послідовностей зображення тка-
nин голови і головного мозку у дітей в
нормі і патології // Променева діагностика,
променева терапія: Зб. наук. робіт Асоціації
радіологів України. - К., 1998. - Вип.2 -
С.111-116.
2. Гончар О.А., Уралова Л.Т. Особливості
МР – анатомії бокових шлуночків та поза
мозкового простору у новонароджених
дітей грудного віку // Зб. наук. робіт КМАПО.
3. Гончар О.А., Уралова Л.Т. Обґрунтування
діагностичних програм нейрорадіологічного
обстеження новонароджених та немовлят
// 1-ий Український конгрес фахівців з
ультразвукової діагностики (1-4 червня
4. Уралова Л.Т., Гончар А.А. Роль іммуногенеза
и терапевтична коррекція девіантного
поведення у дітей і подростків з цере-
бровідної резидуально-органічної недо-
статочністю // «Психічне здоров'я». -
5. Danner L. Schlaftörungen und Kinderpsy-
- Bd. 33, #15, S. 1723-1733.
6. Gabriellei W.F. Sinistrality and delinquency
// J. Abnormal Psychol. - 2004. Vd. 89, #5,
P.654-661.
7. Гончар О.А. Можливості променевої діа-
гностики перинатальних мозковосудинних
уражень у немовлят (навчальний посібник).
8. BowenK.E., Gatzke-KoppL.M. Braininjuryasa-
riskfactorforpsychopathology // Child and Ad-
olescent Psychopathology / Eds. T.P.Beau-
chaine, S.P.Hinshaw. - Hoboken, New Jersey:
9. Гончар О.А., Уралова Л.Т. Психічні наслідки
перинатальних мозковосудинних ураже-
нь// «Психічне здоров'я». - 2014. - №3-4. -
С.35-36.