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## OPTIMIZATION OF THE EDUCATIONAL PROCESS FOR ADVANCED ASSISTANCE OF NEWBORN WITH PERINATAL PATHOLOGY OF THE NERVOUS SYSTEM

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*Харківська медична академія післядипломної освіти*

## ОПТИМІЗАЦІЯ НАВЧАЛЬНОГО ПРОЦЕСУ ДЛЯ УДОСКОНАЛЕННЯ ДОПОМОГИ НОВОНАРОДЖЕНИМ ІЗ ПЕРИНАТАЛЬНОЮ ПАТОЛОГІЄЮ НЕРВОВОЇ СИСТЕМИ

**The aim of the work** – presentation of author’s experience on improvement of educational process on cycles of professional improvement for Pediatric Neurology physicians to improve neonatal perinatal pathology of the nervous system.

**The main body.** Development of new cycles to improve the educational process of theoretical issues of Pediatric Neurology and present features of practical skills on the basis of Department at “University Clinic” – Municipal Perinatal Center.

Over the past three decades modern perinatal neurology has evolved from a little-known, inceptive area of Pediatric Neurology into a highly informative, scientific field of medicine with opportunities for topical diagnosis of pathological process with evidence-based methods of treatment and rehabilitation of children with neurological pathology. Training and professional development of children’s neurologists at the Department of Neurology and Pediatric Neurology of Kharkiv Medical Academy of Postgraduate Education guarantees a high methodological level of presentation of lecture material, and the development of practical skills and the opportunity to participate in the diagnostic and treatment processes exactly in such “university clinic” as Kharkiv Municipal Perinatal Center, which is the key to successfully master and improve complex section of Pediatric Neurology, i.e. perinatal neurology.

**Conclusion.** Preparation of experienced specialists in Pediatric Neurology is the key to skilled care of children born with perinatal pathology of the nervous system, which reduces morbidity and disability.

**Key words:** medical education; professional improvement for Pediatric Neurology physicians; training at university clinic; perinatal damage to the nervous system of newborns.

**Мета роботи** – представлення досвіду автора щодо удосконалення навчального процесу для поліпшення допомоги новонародженим із перинатальною патологією нервової системи.

**Основна частина.** Розглянуто шляхи вдосконалення навчального процесу з теоретичних питань дитячої неврології, а також важливість навчання практичних навичок на базі кафедри в університетській клініці – перинатальному центрі.

Представлено результати вдосконалення навчального процесу, які охоплюють не тільки теоретичну частину навчання, а й досвід оволодіння практичними навичками на базі університетської клініки – у Харківському міському перинатальному центрі.

**Висновки.** Навчання і підвищення кваліфікації лікарів дитячих неврологів на кафедрі неврології і дитячої неврології ХМАПО гарантують високий методичний рівень викладання лекційного матеріалу, а освоєння практичних навичок і можливість брати участь у діагностичному та лікувальному процесі саме в такій університетській клініці, як ХМПЦ, є запорукою успішного засвоєння і вдосконалення складного розділу дитячої неврології – перинатальної неврології. Підготовка досвідчених фахівців у галузі дитячої неврології – запорука кваліфікованої допомоги дітям, які народилися з перинатальною патологією нервової системи, що буде сприяти зниженню захворюваності та інвалідності.

**Ключові слова:** медична освіта; підвищення кваліфікації лікарів дитячих неврологів; навчання в університетській клініці; перинатальне ушкодження нервової системи у новонароджених.

**Introduction.** Perinatal pathology of the nervous system is currently one of the main reasons to cause infant morbidity and disability. This situation raises high con-

cerns about negative demographic indicator that has been observed in Ukraine over the past decades, i.e. surplus of deaths over births. The newborn health becomes not only a medical issue, but a social one as well.

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The unfavorable ecological situation, growth of persistent perinatal sexually-transmitted infections, low health level with adolescent girls, and psychoemotional tension of the population due to economic instability are the factors that negatively affect the increase of perinatal pathology with newborns [6].

**The aim of the work** – presentation of author’s experience on improvement of educational process on cycles of professional improvement for child neurology physicians to improve neonatal perinatal pathology of the nervous system.

**The main body.** As a rule, healthy children are born in families of healthy parents. Healthcare of future parents, pregnancy planning and preparation for pregnancy and conscious motherhood and paternity by taking preconceptional preventive measures is the foundation of a healthy family and future generation, which is so necessary today and can improve the health of children in Ukraine [1].

The structure of perinatal pathology with newborns treated in Kharkiv Municipal Perinatal Center has remained stable in recent years and generally replicates the structure of perinatal pathology in Ukraine [8]. Fig. 1.

In their daily practice children’s neurologists face a difficult task of early diagnosis of neurological pathology with newborns [5].

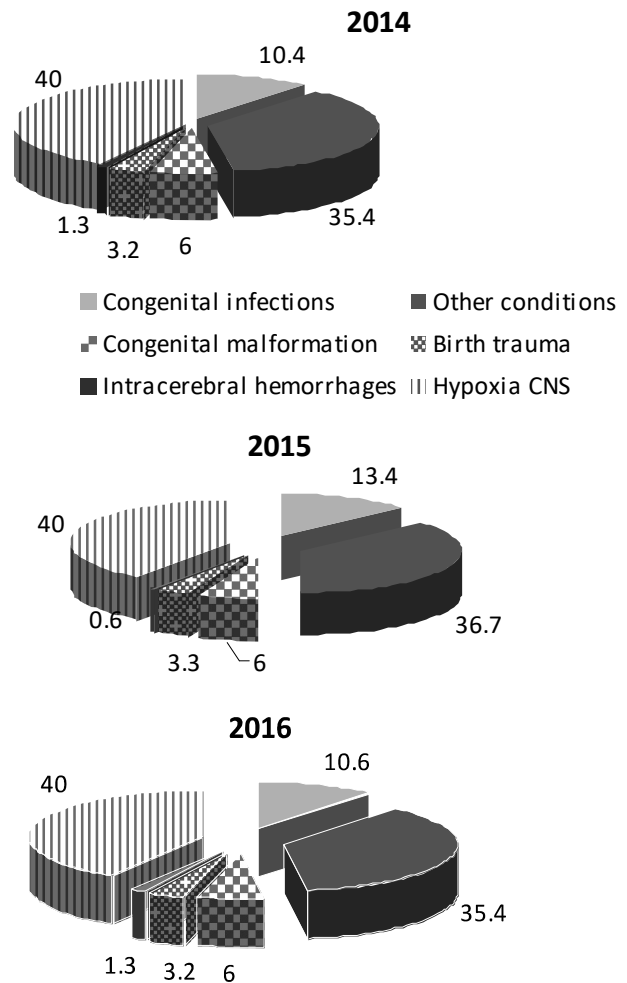
The doctor is up against an important task to make a timely diagnosis of neurological disorder, determine the etiology of pathological process, and prescribe treatment. The importance of perinatal neurology training as one of the basic components in pediatric neurology cannot be overestimated [3].

For more than 40 years the Department of Neurology and Pediatric Neurology has been carrying out specialization courses, thematic advanced training and precertification training courses in pediatric neurology, where pediatricians receive specialization in Pediatric Neurology, while pediatric neurology specialists improve their qualifications.

The specialization course “Pediatric Neurology” includes theoretical and practical sections. The content of the course program covers all the theoretical issues of pediatric neurology including perinatal neurology. The program is built on the basis of training blocks.

The main blocks are 14 program courses planned for 720 academic hours. Each course is an independent part of the program highlighting a separate section of children’s neurology. In the process of training the following types of classes are carried out: lecture, seminar, practical training. Part of the seminar and

### Structure of perinatal pathology in Kharkiv Municipal Perinatal Center within 2014–2016



**Fig. 1.** Structure of perinatal pathology in Kharkiv Municipal Perinatal Center within 2014–2016.

practical training provided with individual manuals is carried out as students’ independent work.

Lectures on pediatric neurology are presented in electronic form demonstrating thematic photographic and video materials collected by the department staff.

Practical classes are conducted by the department in the neonatal in-patient facility of Kharkiv Municipal Perinatal Center, i.e. “university clinic”. The neonatal unit concerning neurological pathology of the clinic has been functioning since October 1995 and is intended for 50 in-patient beds.

The unit includes sick newborns from maternity hospitals of Kharkiv, home-based children, as well as children under the age of three months undergoing rehabilitation and abilitation courses.

Treatment of newborns with nervous system disorders includes medical therapy, physiotherapy, balneotherapy, massage and remedial gymnastics.

Psychological rehabilitation is organized for mothers, whose children are currently treated in Kharkiv Municipal Perinatal Center [2, 4, 7].

When admitted and as a follow-up all neonates are introduced to neurosonography with Doppler velocimetry of cerebral vessels, electroencephalography, and MRI readings [5, 9].

A follow-up is an important component of child monitoring. Currently quite a few Ukrainian perinatal centers have functioning catamnesis rooms. Follow-up child monitoring is conducted by such specialists as neonatologist, pediatrician, pediatric neurologist, and oculist.

A feature of early follow-up monitoring of prematurely born children in Kharkiv Municipal Perinatal Center is planned hospitalization and examination under inpatient treatment, including mandatory atropization prior to examination at oculist's in order to determine the degree of retinopathy of premature infants [10].

Students of the Department of Neurology and Pediatric Neurology have an exclusive opportunity to participate in the diagnostic process, assess the neurological status of the child, monitor the dynamics of the pathological process, and discuss the tactics of further monitoring and treatment of the patient during practical classes.

In the course of practical training, the methods of conducting and evaluation results of neurosonography, magnetic resonance, and electroencephalography are discussed in detail. Students independently conduct a child neurological examination and analyze the findings along with instructor forming a clinical diagnosis. Practical exercises give opportunity to present students a diverse perinatal pathology of the nervous system with newborns and children under 3 months, which is the key to successful development of such a complex section of pediatric neurology as perinatal neurology.

Mastering pediatric neurology major, and specifically perinatal neurology division, requires not only constant

training of practical skills, but continuous improvement by extending theoretical knowledge. Annually Department of Neurology and Pediatric Neurology organizes two precertification courses in pediatric neurology. In 2016 a new course of thematic advanced training "Clinical and ultrasound diagnostics of perinatal nervous system disorders" was developed for children's neurologists, neonatologists, pediatricians, ultrasound doctors, obstetrician-gynecologists, general practitioners, i.e. family medicine, physiotherapists, children's psychiatrists.

Over the past three decades modern perinatal neurology has evolved from a little-known, inceptive area of pediatric neurology into a highly informative, scientific field of medicine with opportunities for topical diagnosis of pathological process with evidence-based methods of treatment and rehabilitation of children with neurological pathology. Training and professional development of children's neurologists at the Department of Neurology and Pediatric Neurology of Kharkiv Medical Academy of Postgraduate Education guarantees a high methodological level of presentation of lecture material, and the development of practical skills and the opportunity to participate in the diagnostic and treatment processes exactly in such "university clinic" as Kharkiv Municipal Perinatal Center, which is the key to successfully master and improve complex section of pediatric neurology, i.e. perinatal neurology.

**Conclusion.** Training of experienced specialists in the field of pediatric neurology is the key to providing qualified assistance to children born with perinatal pathology of the nervous system, which will contribute to reducing morbidity and disability. The search for new ways to improve the pedagogical process is the key to improving the qualification of doctors and the introduction of new diagnostic and therapeutic technologies.

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