МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

М А Т Е Р І А Л И

106-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького колективу
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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Conclusions. The use of sevoflurane is a progressive step in the use of pediatric anesthesiology. The appearance of this drug, such as sevoflurane, has led to new views on inhalation anesthesia in general and, in particular, on new possibilities of anesthesia. The use of sevoflurane in pediatric anesthesiology has shown zero mortality, which is an important aspect when choosing an anesthetic. Thus, given the advantages, sevoflurane anesthesia is well tolerated by children.

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AMPLITUDE INTEGRATED ELECTROENCEPHALOGRAPHY: A PRACTICAL APPROACH TOWARD INTERPRETATION IN CRITICALLY ILL PRETERM NEWBORNS

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Introduction. The modern realities of independent Ukraine are associated with many challenges due to the invasion of a neighboring aggressor country. According to national statistics, the number of newborns in 2023 decreased by 31.05 % compared to 2021, while the incidence of low birth weight babies, including premature births, increased from 5.99 to 6.09 %.

Amplitude-integrated electroencephalography (aEEG) is a modern method of long-term monitoring of brain function in newborns with the possibility of simultaneous continuous video monitoring. The main indications for this research method in premature infants include 1) assessment of cerebral function and degree of cerebral damage in hypoxic-ischemic encephalopathy or birth asphyxia (often in combination with therapeutic hypothermia); 2) assessment of sleep-wake cycle; 3) detection of seizures; 4) assessment of the maturity of cerebral function. Interpretation of aEEG results should be based on "physiological" norms for different gestational ages.

The aim of the study is to investigate the peculiarities of the maturation of bioelectrical activity of the brain in premature infants according to the data of amplitude-integrated electroencephalography.

Material and methods. The study was conducted within the framework of the joint budget research work of the Department of Pediatrics, Neonatology and Perinatal Medicine and the Department of Obstetrics and Gynecology of the Bukovinian State Medical University on the topic: "Improvement of the areas of care for pregnant women, newborns and infants in war and post-war conditions in Ukraine" (KPKVK 2301020, implementation period 2024-2026).

A comprehensive clinical and paraclinical examination of 62 children born before the physiological gestational age (up to 37 weeks) was conducted, and 131 studies were performed using the aEEG method. Recording was performed with an amplitude-integrated electroencephalograph or an electroencephalographic computer complex. For stratification of the severity of the disorder of bioelectrical activity of the brain the classification system for aEEG according to L. Hellström-Westas was used. For statistical analysis of the results the licensed programs Statistica (StatSoft Inc., version 7), Microsoft Excell (AtteStat, version 12.5) and MedCalc Software Ltd (version 22.021) were used.

The study was conducted in accordance with the "Rules of Ethical Principles for Scientific Medical Research Involving Human Subjects" approved by the Declaration of Helsinki (1964-2013), ICH GCP (1996), EEC Directive 609 (dated 24.11.1986), Order of the Ministry of Health of Ukraine No. 690 dated 23.09.2009 and confirmed by the conclusion of the Commission on Biomedical Ethics of the Bukovinian State Medical University (Protocol No. 1 dated 21.09.2023). Written informed consent was obtained from the parents of the newborns.

Results. The analysis of 131 aEEG recordings in preterm infants revealed that the background pattern of continuous normal voltage (CNV) was observed in 39.7% of cases, discontinuous normal voltage (DNV) - in 27.5% of cases, burst suppression (BS) - in 24.4% of cases, low voltage (LV) - in 5.3% of cases, inactive background pattern (flat trace, FT) - in 3.1% of cases. The study found inverse correlations between the severity of the aEEG pattern (from CNV to FT) and gestational age of the newborns ($r = - 0.63$, $p < 0.0001$), postconceptional age ($r = -0.53$, p

< 0.0001), Apgar score at the end of the first (r = -0. 46, p = 0.0002) and fifth (r = -0.49, p < 0.0001) minutes of life; positive correlation with intraventricular hemorrhage grade II-IV (r = 0.57, p < 0.0001) and duration of mechanical ventilation (r = 0.67, p < 0.0001). Direct correlations between the sleep-wake phases and the aEEG were demonstrated in preterm infants with gestational age (r = 0.43, p = 0.0005) and postconceptional age (r = 0.49, p < 0.0001) and their formation after 32 weeks of gestation. Electroencephalographic seizures were diagnosed in 12.9% of cases, allowing timely anticonvulsant therapy.

The criteria for pathological aEEG in preterm infants with perinatal pathology are proposed, in particular: Low voltage (LV) and inactive background pattern (flat trace, FT) in children of any gestational or postconceptional age; burst suppression (BS) pattern in children of gestational or postconceptional age greater than 32 weeks; discontinuous normal voltage (DNV) pattern in children of gestational or postconceptional age greater than 36 weeks; absence of sleep-wake phases in children of gestational or postconceptional age greater than 32 weeks; seizure graph elements in children of any gestational or postconceptional age.

Conclusions. The aEEG is a mandatory method of monitoring the bioelectrical activity of the brain in patients in neonatal intensive care units, the main tasks of which are to identify the main pattern, to determine the sleep-wake phases, and to detect electroencephalographic seizures. In premature infants, the evaluation of aEEG results should be performed with regard to the physiological characteristics of brain maturation depending on the gestational age at birth and postconceptional age at the time of examination, as well as the severity of somatic pathology and the complexity of therapeutic interventions. Premature infants meeting the above criteria should be included in the program of monitoring and early intervention for early diagnosis, prevention and treatment of the consequences of damage to the central nervous system.

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MODERN ASPECTS OF THE TREATMENT OF DUODENAL ULCER

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Introduction. Duodenal ulcer is one of the most serious pathologies of the gastrointestinal tract. The use of already-known schemes for the treatment of peptic ulcer disease is not always sufficiently effective, therefore it remains an extremely relevant issue, especially in childhood. To date, several experimental researches have confirmed the participation of endothelial dysfunction in the formation of acid-dependent diseases, in particular, duodenal ulcers. The proven multifactorial etiopathogenesis of this disease requires not only an individual approach to each patient but also determines the need to find new treatment approaches.

The aim of the study. To investigate the effectiveness of complex treatment of duodenal ulcers using nitrogen monoxide donors.

Material and methods. In total 35 children with duodenal ulcers (ages 11 to 18 years) were examined. During esophagogastroduodenoscopy, all children were diagnosed with an ulcer defect. Depending on the treatment scheme, the children were divided into two groups: I group (17 children) – children who received therapy according to generally accepted recommendations; II group (18 children) – children who, in addition to traditional therapy, received citrarginine 10 ml twice a day after previous dilution in 50 ml of distilled water for two weeks.

The groups were representative in terms of age, sex, and place of residence. All children before the start of treatment probably did not differ in terms of clinical manifestations, endoscopic signs and indicators of endothelial dysfunction (p>0,05).

Results. After a course of complex treatment, a probably faster regression of disease symptoms was noted in children of the II group(p<0,05).In contrast to the children of the I group, in the children of the II group, the pain syndrome disappeared 4.4±0.3 days faster, the dyspeptic syndrome disappeared by 3.3±0.4 days, and the astheno-vegetative syndrome disappeared by 2.5±0.6 days (p<0,05).3 months after the treatment, a statistically significant increase in the level of NO in the blood plasma ((11.1±0.6) μmol/l, p<0.05) and a simultaneous decrease in the Et-1