

SUBJECT CARD

Faculty of Medicine and Health Sciences

Field of studies: Medicine

Form of studies: Full-time

Degree: Long-cycle Master's program

Specializations: No specialization

Academic year: 2022/2023

NEUROLOGY	
SUBJECT	Neurology
NUMBER OF ECTS POINTS	6
LANGUAGE OF INSTRUCTION	English
TEACHER(S)	Professor Ryszard Czepko, MD, PhD Professor Monika Rudzińska-Bar, MD, PhD Magdalena Wójcik-Pędziwiatr, MD, PhD Magdalena Doręgowska, MD Paulina Kaczmarek, MD Kacper Szewczyk, MD Tomasz Tomaszewski, MD
PERSON RESPONSIBLE	Professor Monika Rudzińska-Bar, MD, PhD
NUMBER OF HOURS	
LECTURES	20 h
CLASSES	75 h
SEMINARS	10 h
GENERAL OBJECTIVES	
OBJECTIVE 1	The student is obligated to get a knowledge of the methodology and interpretation of neurological examination, neurological syndromes, diagnostic procedures of the central and peripheral nervous system diseases as well as therapy of neurological diseases, according to the latest achievements of medical science.
OBJECTIVE 2	The student will be acquainted with knowledge in the field of the disorders of the nervous system requiring surgical treatment, the consequences of craniocerebral, spine and peripheral nerve injuries, the rules of diagnosis and treatment (surgical and pharmacological) of raised intracranial pressure syndrome and the criteria of brain death. Preparation of the student to improve the ability to use modern methods of diagnostic neuroimaging in diseases of the central nervous system.

NEUROLOGY

LEARNING OUTCOMES

MK1	Knowledge: Student knows the principles, technique and interpretation of a neurological examination.
MK2	Knowledge: Student knows and distinguishes basic neurological symptoms.
MK3	Knowledge: Student knows and understands the causes, symptoms, course, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: a) headaches: migraine, tension headache and headache syndromes and n. V neuralgia, b) vascular diseases of the brain, particular stroke, c) epilepsy, nervous system infections, in particular meningitis, Lyme disease, herpes encephalitis, neurotransmission diseases, d) dementia, in particular in Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, e) extrapyramidal diseases, in particular in Parkinson's disease, f) demyelinating diseases, in particular in multiple sclerosis, g) diseases of the neuromuscular system, in particular amyotrophic lateral sclerosis, myasthenia gravis, peripheral neuropathies, sciatica h) cranio-cerebral trauma.
MK4	Knowledge: Student knows the rules for qualification and performance as well as the most common complications of basic surgical procedures and invasive diagnostic and therapeutic procedures for neurology and neurosurgery.
MK5	Knowledge: Student knows the principles of perioperative safety, patient preparation for surgery, general and local anesthesia.
MK6	Knowledge: Student knows the problems of imaging tests used today, in particular: a) radiological symptomatology of basic diseases, b) instrumental methods and imaging techniques used for therapeutic procedures, c) indications, contraindications and preparation patients for imaging tests and contraindications for the use of contrast agents.
MK7	Knowledge: Student knows and understands the causes, symptoms and principles of diagnosis and therapeutic procedure in the case of the most common central nervous system diseases in the area of: a) brain edema and its complications, with special regard to emergencies, b) other forms of intracranial increase pressure with their complications, c) cranio-cerebral traumatic injuries, d) vascular defects of the central nervous system, e) tumors of the central nervous system, f) diseases of the spine and spinal cord.
MK8	Knowledge: Student knows the criteria of brain death.

NEUROLOGY

MS1	Skills: Student case history taking (an adult patient).
MS2	Skills: Student performs a full and targeted neurological examination of an adult patient.
MS3	Skills: Student assesses the general condition, the state of consciousness and awareness of the patient.
MS4	Skills: Student performs differential diagnosis of the most common neurological diseases.
MS5	Skills: Student plans diagnostic, therapeutic and preventive procedures.
MS6	Skills: Student qualifies the patient for home or /and hospital treatment.
MS7	Skills: Student performs functional assessment of a disabled patient.
MS8	Skills: Student proposes a rehabilitation program for the most common diseases.
MS9	Skills: Student interprets laboratory tests and identifies the causes of deviations.
MS10	Skills: Student collects material for tests used in laboratory diagnostics.
MS11	Skills: Student performs basic medical procedures, including: a) body temperature measurement, pulse measurement, non-invasive measurement of blood pressure, b) monitoring of vital signs with the help of a cardiomonitor, pulse oximetry.
MS12	Skills: Student assist in lumbar puncture and interpret the results of the examination. Performs lumbar puncture on the phantom.
MS13	Skills: Student optic fundus examination and interpreting test results.
MS14	Skills: Student keeps patient medical records.
MS15	Skills: Student assesses and describes somatic and mental state of the patient.
MC1	Social competency: Students can maintain respectful contact with the patients.
MC2	Social competency: Students are guided by the patient wellbeing, putting them first.
MC3	Social competency: Students respect medical confidentiality and patient rights.
MC4	Social competency: Students are aware of their own limitations and the ability to constantly improve their education.

NEUROLOGY

INTRODUCTORY REQUIREMENTS

- [1] The student has knowledge of the anatomy and physiology of the nervous system.
 [2] The student has to pass initial test on anatomy and physiology of the nervous system (20 questions).

COURSE PROGRAM

DETAILED DESCRIPTION OF THE TOPIC BLOCKS

LECTURE 1	Vascular diseases of nervous system. Neurology - 3 h (area E)
LECTURE 2	Brain degenerative diseases - Alzheimer's disease, Parkinson's disease, MSA etc.). Neurology - 3 h (area E)
LECTURE 3	Muscle, neuromuscular junction, root, plexus and peripheral nerve diseases. Neurology - 3 h (area E)
LECTURE 4	Headaches, epilepsy. Neurology - 2 h (area E)
LECTURE 5	Demyelinating diseases. Multiple sclerosis. Neurology - 3 h (area E)
LECTURE 6	Brain, spine and spinal canal tumors. Neurosurgery - 2 h (area F)
LECTURE 7	Cranio-cerebral injuries, spine and spinal cord injuries, peripheral nerve injuries. Brain vascular neurosurgery. Neurosurgery - 2 h (area F)
LECTURE 8	Functional neurosurgery - basic information. Degenerative spinal condition. Neurosurgery - 2 h (area F)
CLASS 1	Neurological history and methodology of neurological examination (examination of cranial nerves, examination of higher nervous system functions: apraxia, aphasia, agnosia, examination of limbs, trunk, meningeal and root symptoms). Diagnostic tests in neurology. Lumbar puncture. Fundoscopy. Neurology - 5 h (area E) Implemented at the Medical Simulation Center
CLASS 2	Headaches: migraine, tension headache, headache syndrome, V cranial nerve neuralgia (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of diagnostic tests, qualifying the patient for home treatment or hospital) Neurology - 5.5 h (area E)

NEUROLOGY

CLASS 3	<p>Brain vascular diseases; stroke (patient examination, medical history, describing the patient's condition, determining initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home or hospital treatment)</p> <p>Neurology - 5.5 h (area E)</p>
CLASS 4	<p>Epilepsy: (patient examination, medical history from an adult, describing the patient's condition, establishing an initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home or hospital treatment).</p> <p>Neurology - 5.5 h (area E)</p>
CLASS 5	<p>Dementia: (examination of the patient, medical history, including the specifics of the history of the elderly, describing the patient's condition, establishing a preliminary diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home or hospital treatment).</p> <p>Neurology - 5.5 h (area E)</p>
CLASS 6	<p>Multiple sclerosis: (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home or hospital treatment).</p> <p>Neurology - 5.5 h (area E)</p>
CLASS 7	<p>Extrapyramidal diseases, Parkinson's disease and other parkinsonisms: (patient examination, collecting medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home or hospital treatment).</p> <p>Neurology - 5.5 h (area E)</p>
CLASS 8	<p>Diseases of the neuromuscular system: (patient examination, medical history, describing the patient's condition, determining initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home or hospital treatment).</p> <p>Neurology - 5.5 h (area E)</p>
CLASS 9	<p>Cerebellar diseases, extrapyramidal diseases and other neurogenetic diseases: examination of the patient (examination of the patient, medical history, description of the patient's condition, determination of initial diagnosis, proposition of diagnostic tests, proposition of treatment, interpretation of results of tests, qualification of the patient for home or hospital treatment).</p> <p>Neurology - 5.5 h (area E)</p>

NEUROLOGY

CLASS 10	<p>Nervous system infections; meningitis, Lyme disease, herpes encephalitis, neurotransmission (patient examination, collecting medical history from an adult, describing the patient's condition, determining initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for home treatment or hospital), assist in lumbar puncture. Neurology - 5.5 h (area E)</p>
CLASS 11	<p>Diseases of the spine and spinal cord (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for surgical treatment). Neurology - 5.5 h (area E)</p>
CLASS 12	<p>Vascular defects of the central nervous system (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for surgical treatment). Degenerative and discopathic diseases of the spine: (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of additional tests, qualifying the patient for surgical treatment). Neurosurgery - 5 h (area F)</p>
CLASS 13	<p>Cranio-cerebral injuries; cerebral edema, intracranial narrowness, types of hematomas and other lesions (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for surgical treatment). Criteria for brain death. Neurosurgery - 5 h (area F)</p>
CLASS 14	<p>Central nervous system tumors (patient examination, medical history, describing the patient's condition, establishing initial diagnosis, proposing diagnostic tests, proposing treatment, interpreting the results of tests, qualifying the patient for surgical treatment). Neurosurgery - 5 h (area F)</p>
SEMINAR 1	<p>Cranial nerves and visual, auditory and olfactory analyzer - signs of damage. Neurology - 1 h</p>
SEMINAR 2	<p>Symptoms of damage to the central and peripheral motor neurons and sensory pathways (hemispheric, brainstem and spinal syndromes). Neurology - 1 h</p>

NEUROLOGY	
SEMINAR 3	Extrapyramidal system - symptoms, diagnosis of extrapyramidal syndromes. Balance disorder. Meningeal signs (neck stiffness). Neurology - 1 h
SEMINAR 4	Higher nervous system function disorders. Interpretation of neurological diagnostic tests results. Neurology - 1 h
SEMINAR 5	Unconscious patient - causes of consciousness disorders, coma, brain death. Neurology - 1 h
SEMINAR 6	Neurological emergencies. Neurology - 1 h
SEMINAR 7	Nervous system vascular diseases - stroke. Neurology - 1 h
SEMINAR 8	Epilepsy - etiology, symptoms, diagnosis and treatment. Neurology - 1 h
SEMINAR 9	Brain degenerative diseases. Neurology - 1 h
SEMINAR 10	Meningitis and encephalitis, prion diseases, AIDS - neurological manifestation. Neurology - 1 h
DIDACTIC METHODS (APPLIED)	
	Lectures Seminars Multimedia presentations Case studies Discussion Bedside teaching E-learning classes Classes in a medical simulation workshop
STUDENTS WORKLOAD	
NUMBER OF HOURS UNDER SUPERVISION	105 hours
NUMBER OF PREPARATION HOURS	Preparation for classes: 75 hours Preparation for the exam: 30 hours
TOTAL NUMBER OF HOURS FOR THE COURSE	210 hours

NEUROLOGY

CONDITIONS FOR COURSE COMPLETION

Attendance at all lectures and seminars is obligatory. The condition for admission to the exam is passing the classes and/or seminars.

[1]* Attendance confirmed by the assistant at all clinical classes (classes and seminars).

[2] Obtaining a positive assessment of clinical classes conducted in the Department and Clinic of Neurosurgery by the person responsible for the subject.

[3] To pass a practical exam is necessary for admission to the written test exam.

[4] Written exam - test (80 questions).

*1.1 Participation of students in the seminars in the subject is obligatory. In case of absence - before the end of the semester, participation in the classes of another group is required, which thematically corresponds to missed seminars or pass the seminar material at the assistant.

1.2 Participation in the classes is obligatory for every student. In this case, 100% attendance is required. In case of absence - before the end of the semester, participation in the classes of another group is required, which thematically corresponds to the abandoned exercises.

1.3 Attendance at all clinical classes (seminars and classes) must be confirmed by an assistant in the course card.

1.4 Completion of the subject of clinical classes must be confirmed by a positive assessment of the assistant in the course sheet.

1.5 Participation in the classes of another group is possible only with the prior consent of the teacher.

1.6 In the event of failure to complete the required attendance at the first date of the examination session, the Student shall not be admitted to the exam. Admission to the exam on the second date requires passing missed classes at the teacher conducting them.

1.7 In the event that the number of student absences from classes exceeds 50% of the total number of hours of classes provided for in the study plan, the student does not receive credit for the course and cannot take the exam on the first or second date.

1.8 Any controversies and conflicts arising from these regulations or in matters not covered here should be first settled with the person conducting the classes, and in the event of disagreement with the person responsible for the subject, and then the authorities of the Faculty of Medicine and Health Sciences.

METHODS OF ASSESMENT

IN TERMS OF KNOWLEDGE	Written exam - test (80 questions). - a condition for a positive evaluation of the written exam is to obtain a minimum of 60% of the maximum number of points from the multiple-choice test.
IN TERMS OF SKILLS	Practical exam: 1. Obtaining a positive assessment of neurological examination skills and knowledge of neurological syndromes (after the first week of exercise, grading scale 2-5 points); 2. Examine the patient, interpret the results of additional tests, propose a diagnosis, differential diagnosis and treatment (case report). It's the submission of a case history in a written version, scored on a scale of 0-10 points. (after the second week of exercise).

NEUROLOGY

IN TERMS OF SOCIAL COMPETENCY	Activity during classes, observational behaviour towards patients, colleagues, assessment of group work.
FORMATIVE	Receiving a positive opinion of the teacher - long-term observation in terms of acquiring competences (K1-K4). Colloquium, mid-term papers.
SUMMATIVE (I & II TERMS)	I term (EXAM): Written exam – test 80 questions (multiple choice test) II term (RETAKE EXAM): Oral exam – 3 open questions

GRADING SCALE

3,0 (SATISFACTORY)	obtaining a minimum of 6 points from the case report and 60 - 65% of correct answers from the test
3,5 (SATISFACTORY PLUS)	obtaining a minimum of 7 points from the case report and 66 - 75% of correct answers from the test
4,0 (GOOD)	obtaining a minimum of 8 points from the case report and 76 - 85% of correct answers from the test
4,5 (GOOD PLUS)	obtaining a minimum of 9 points from the case report and 86 - 95% of correct answers from the test
5,0 (VERY GOOD)	obtaining 10 points from the case report and 96 - 100% correct answers from the test

BASIC LITERATURE

- [1] Hadi Manji et al. Oxford HandBook of Neurology, Oxford University Press, second edition 2014;
 [2] J.C. Brust. Current Diagnosis & Treatment. Neurology. McGrawHill Companies ,Lange, second edition 2012;
 [3] M. Greenberg – Handbook of Neurosurgery 2010, Thieme.

SUPPLEMENTARY LITERATURE

- [1] D.Greenberg, M.Aminoff, R.Simin Clinival Neurology. McGraw-Hill, fifth edition 2002;
 [2] K.W. Lindsay, I. Bone, G. Fuller—Neurology and Neurosurgery Illustrated. FiFth Edition Esevier, 2011.