SUBJECT CARD

Faculty of Medicine and Health Sciences
Field of studies: Medicine
Form of studies: Full-time
Degree: long-cycle Master's programme
Specializations: No specialization
Academic year: 2023/2024

NEPHROLOGY AND UROLOGY	
SUBJECT	Nephrology and Urology
NUMBER OF ECTS POINTS	4
LANGUAGE OF INSTRUCTION	English
TEACHER(S)	Professor Jacek A. Pietrzyk, M.D., Ph.D. (lectures, seminars) Maciej Kiersztejn, M.D., Ph.D Katarzyna Bigaj, M.D., Nina Szumańska, M.D.(bedside classes nephrology) Associate professor Kajetan Juszczak, M.D., Ph.D. Piotr Maciukiewicz, M.D. Włodzimierz Klima, M.D., Ph.D. Mateusz Szopa M.D. (lectures, seminars, bedside classes in urology) Ewa Gacka, M.D, Ph.D Grażyna Kucharska M.D., Ph.D. (bedside classes in pediatric nephrology)
PERSON RESPONSIBLE	prof. Jacek A. Pietrzyk, M.D., Ph.D.
NUMBER OF HOURS	
LECTURES	24 hrs.
CLASSES	40 hrs.
SEMINARS	4 hrs.
GENERAL OBJECTIVES	
OBJECTIVE 1	Allow students to gain essential knowledge on renal diseases in children and adults. To accomplish signs and symptoms of the most common diseases of the kidneys and the urinary tract. To become acquainted with the data on epidemiology of renal diseases. To gain ability of differential diagnosis of renal diseases and urinary tract diseases, laboratory results interpretation and imaging tests explanation

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OBJECTIVE 2	Make students prepared for planning, management and follow-up in patients with urinary tract infections, acute and chronic glomerular diseases, interstitial diseases, acute kidney injury, chronic kidney disease, malignancies of the kidneys and urinary tract and urinary tract obstruction. Teach students how to manage the patients with functional disturbances of lower urinary tract.
LEARNING OUTCOMES	
MK1	**Knowledge.** Student knows and can list the congenital anomalies of the kidneys and urinary tract, knows contemporary classification of primary and secondary glomerular diseases, acute and chronic. Owns the knowledge on kidney diseases associated with cysts. Knows the main tubular dysfunctions, their clinical symptoms and signs. Knows recent staging of acute kidney injury and chronic kidney disease and classification of elevated blood pressure in children and in adults. Student knows basic disturbances in acid-base balance and changes in blood ions concentration accompanying to renal diseases. Knows the principles of patient's evaluation and management at given stages of renal insufficiency. Knows the renal replacement therapies and extracorporeal blood purification methods.. Student knows the basics of pharmacological management of renal diseases, including urinary tract infections, glomerular diseases, nephrotic syndrome. Knows the mechanisms of action of immune-suppresive agents commonly used in glomerlulopathies and some nephropathies, and after renal transplantation. Knows the rules how to treat elevated blood pressure and which medications are suitable for nephroprotection.
MK2	**Knowledge.** Student knows basic urological problems related to kidneys and urinary tract in children and in adults. Knows the evaluation and management of benign and malignant disorders the kidneys, bladder, urethra and prostate gland. Knows the evaluation and management of patients after renal trauma and urinary tract injuries. Knows the basics of functional disturbances of lower urinary tract, including urinary incontinence. Student knows the essentials of maintaining patency of an urinary tract and urine discharge.
MK3	**Knowledge:** Student knows the rules of personal data protection, patient's consent to hospitalization and treatment, presumed consent in the case of expanded medical interventions, and circumstances under which the above is necessary to be signed by a patient
MS1	**Skills:** Student is able to take the patient's medical history, taking into consideration typical signs and symptoms being age-related in pediatric and adult subjects. Can manage medical history taking from the parents/guardian of sick child or spouce/relatives/guardian of elderly patients with renal problems.

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MS2	**Skills:** Student is able to complete physical examination (inspection, palpation, percussion, auscultation) in pediatric and adult patient with renal and/or urinary tract disease. Is able to find out pathology accompanying to renal disorders (growth retardation in children, malnutrition, dehydration/fluid overload, elevated blood pressure in patients at any age)
MS3	Student can interpret the results of urinalysis, urine culture, basic laboratory data, biochemical and immunological tests results. Student is able to assess the renal function according to chosen serum markers' level and available equations (Cockroft-Gault, MDRD, CKD-EPI). Student is able to list absolute and relative clinical and biochemical indications to initiate renal replacement therapy in case of acute renal failure and end stage renal disease
MS4	**Skills:** Student takes patient's blood pressure and can interpret the obtained result in pediatric and adult patient
MS5	**Skills:** Student is able to recognize essential clinical signs and symptoms of extra renal organ involvement according to renal disorders and accompained by acid-base balance disturbances, biochemical changes, water and ion metabolism disturbances secondary to renal disease.
MS6	**Skills:** Student is able to recognize essential signs of underdialysis based upon laboratory data, clinical symptoms and dialysis adequacy indices
MC1	**Social Competence.** Student reveals willingness to improve his/hers competence
MC2	**Social Competence:** Student shows respect and empathy towards the patients

INTRODUCTORY REQUIREMENTS
Basic knowledge on anatomy and physiology of the kidneys. Basic knowledge on methods of imaging the kidneys and the urinary tract.

COURSE PROGRAM	DETAILED DESCRIPTION OF THE TOPIC BLOCKS
LECTURE 1	Evaluation of patient with hematuria, proteinuria and leukocyturia (pyuria)
LECTURE 2	Determining renal function. Acute kidney injury, chronic kidney disease
LECTURE 3	Urinary tract infections (UTIs) in adults and in children
LECTURE 4	Glomerular diseases of the kidney
LECTURE 5	Short review of kidney diseases known as nephropathies
LECTURE 6	Tubulopathies. Renal stone disease – nephrologist's prospective
LECTURE 7	Management of hypertension in children and adults

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LECTURE 8	Renal replacement therapies
LECTURE 9	Emergencies in urology
LECTURE 10	Uro-genital cancers (urinary bladder cancer, prostate cancer, renal cancer, testicle cancer, penile cancer)
LECTURE 11	Uro-genital benign disorders (benign prostate hyperplasia, urolithiasis, urinary tract infections)
LECTURE 12	Functional disturbances of lower urinary tracts (overactive bladder, painful bladder syndrome, urinary incontinence) Congenital diseases of uro-genital system
CLASS 1	Pediatric nephrology: Taking a patient's history and physical examination of child with congenital anomalies of kidneys and urinary tract, with urinary tract infection, nephrotic syndrome, glomerular disease, on dialysis. Office records and progress notes of examined patients (SOAP – subjective manifestations/informations reported by patients/parents; objective signs from examination; assessment of current status; plans for further study). Patient's/parents' presumed consent for expanded diagnostic procedures. Follow-up and long-term ambulatory care in children with renal diseases. Renal clinic – the benefits from the long-term specialist care
CLASS 2	Pediatric nephrology. Evaluation of growth and developement in children with renal diseases, blood pressure measurement and interpretation. Hypertension management. Planning diagnostic and therapeutic activities and interpretation of laboratory data from urinalysis (dipstic test), urine culture, blood chemistries, and renal function markers in urinary tract infection, acute glomerulonephritis, nephrotic syndrome, chronic kidney disease. Estimation of glomerular filtration rate (eGFR) in children.
CLASS 3	Nephrology. Taking a patient's history and physical examination of adult patient with urinary tract infection, with nephrotic and nephritic symptoms, nephrotic range proteinuria, with diabetic nephropathy, hypertensive nephropathy, with chronic kidney disease (CKD) stage 3-5, on chronic dialysis. Making a plan for diagnostic and therapeutic activities in patients with most common renal disorders Office records and progress notes of examined patients. Renal clinic records.
CLASS 4	Nephrology. Adult patient on chronic dialysis. Evaluation of vascular access function and extra renal organ involvement in end stage renal disease patients, including anemia, mineral bone disease, malnutrition and cardiovascular pathology. Absolute and relative indications to start acute and chronic renal replacement therapy. Kidney recipient work-up .

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CLASS 5	Urology: physical examination and discussion on diagnosis and management of acute and chronic urinary retention (acute and chronic obstructive uropathy. Diagnosis and management of the patients with uro-genital tract neoplasms (urinary bladder cancer, prostate cancer, renal cancer, testicle cancer, penile cancer). Urinary bladder catheterization (intermittent, indwelling), exchange of urinary catheter, urostomy and nephrostomy care and exit site dressing change.
CLASS 6	Urology. Assist at the diagnostic procedures at the division (i.e.: ultrasound examination of the kidney and urinary tract, cystoscopy, urodynamic evaluation of the bladder, thin needle biopsies of the kidney and prostate gland). Assist at the therapeutic procedures (i.e.: lithotripsy, nephrostomy, vesicostomy), internal catheters placement and retrograde vesico-ureteric and uretero-pelvic stents placement
SEMINAR 1	Interesting and urgent cases in nephrology
SEMINAR 2	Basic urological procedures
DIDACTIC METHODS (APPLIED)	
	Lecture Seminar Bedside classes at the division of pediatric nephrology, unit, division of adult nephrology and dialysis, division of urology
STUDENTS WORKLOAD	
NUMBER OF HOURS UNDER SUPERVISION	68 hrs. (including lectures, seminars and bedside classes at divisions of pediatric nephrology, adult nephrology, urology and dialysis unit) accordingly to study plan
NUMBER OF PREPERATION HOURS	60 hrs. Preparation for classes: 20 Preparation for seminars: 10 Preparation for the exam : 30
TOTAL NUMBER OF HOURS FOR THE COURSE	128 hrs.
CONDITIONS FOR COURSE COMPLETION	
	The attendance at the bedside classes, seminars and lectures is obligatory. Two or more absences either at bedside classes or seminars must be explained in written form (medical certificate acceptable). The abandoned classes, seminars and lectures must be made up for one's absence and given a credit in a negotiable form by a person in charge
METHODS OF ASSESMENT	

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IN TERMS OF KNOWLEDGE	1st term, written test examination (I) 2nd term: oral examination (II)
IN TERMS OF SKILLS	Assessment of establishing the relationships and communication ability between the student and the patient. Assessment of practical skills in medical history taking, physical examination and ordering essential labs, diagnostic procedures and imaging tests. Assessment of student's self-ability to perform basic diagnostic and nursing procedures in renal and urological patients according to The Evaluation Chart of Clinical Competence. The **Objective Structured Clinical Examination** (OSCE), to allow a student to practice and demonstrate clinical skills in a standardized medical scenario.
IN TERMS OF SOCIAL COMPETENCY	Assessment of student's activity at clinical classes and seminars Assessment of student's potentials to establish relationships with renal/urological patients at the time of bedside classes
FORMATIVE	Discussion on the cases presented at bedside/clinical classes
SUMMATIVE (I & II terms)	Completing a credit for clinical classes; Completing a credit for seminars and lectures **Term I. Written exam** 100 questions on nephrology and urology in the written form of single choice closed test including 1. verstractor and 4. distractors or multiple choice questions, in which one or more correct answers are possible. At least 5. clinical cases and the questions concerning each, will be included. **Term II. Oral retake exam or remedial exam** for students who did not necessarily fail the first exam but didn't meet course objectives. *On-line* examination allowed, if immediate contact with the student will not be made possible
GRADING SCALE	
3,0 (satisfactory)	**60-69** correct answers
3,5 (satisfactory plus)	**70-74** correct answers
4,0 (good)	**75-79** correct answers
4,5 (good plus)	**80-84** correct answers
5,0 (very good)	**85 and more** of correct answers
BASIC LITERATURE	

NEPHROLOGY AND UROLOGY

[1] Current Medical Diagnosis and Treatment. Annual update 2023. Part 22: Kidney diseases. Part 23: Urologic disorders. M.A. Papadakis, S.J. McPhee, M.W. Rabow, K.R. McQuaid (ed.) McGraw Hill Lange Publishers.
[2] Oxford Handbook of Urology. J. Reynard, S.F. Brewster, S. Biers (ed.). Oxford University Press, 2019
[3] Mc Master Textbook of Internal Medicine 2019/20. Nephrology, pp. 1042-1114. R. Jaeschke, P. Gajewski (ed.), Medycyna Praktyczna , Kraków 2019.
[3] The 5minute Pediatric Consult, 6th Edition, M.W. Schwartz (ed.), Lippincott, Williams and Wilkins, 2009

SUPPLEMENTARY LITERATURE (OPTIONAL)

[1]. Oxford Handbook of Nephrology and Hypertension. 2nd Edition. S. Steddon, N. Ashman, A. Chesser, J. Cunningham (ed.). Oxford University Press, 2014.
[2]. Kaplan Internal Medicine Lecture Notes. Nephrology, 2019, USMLE® Step 2 CK, http://ebook2book