

INTERNATIONAL HIGHER SCHOOL OF MEDICINE

DEPARTMENT PEDIATRICS

SYLLABUS
PEDIATRIC NEPHROLOGY

2022-2023 academic year
for students of medical faculty
3 course 6 semester, groups ____
0,8 credits (26 h, including auditorial 14 h, independent work – 14 h)

Lecturer: **Beishebaeva Nasira**
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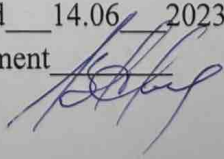
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Venue: National center of Maternity and childhood welfare

The Syllabus is considered
at the meeting of the department of _Pediatrics_____
Protocol № __ 8 __ dated __ 14.06 __ 2023
Head of the department 

Course Objective:

- to teach students to monitor the harmonious development of the child, to diagnose, treat and prevent the most common childhood diseases, taking into account the age-related anatomical, physiological, morphological and immunological characteristics of the growing child's body.
 - develop independent clinical thinking aimed at the effective use of the acquired knowledge in the provision of timely, medical and medical and social assistance to children of all age groups
- to develop in the trainee practical skills of hospital and out-of-hospital diagnosis of common diseases and the provision of medical care to children.

Knowledge:

- Principles of organization of the treatment and diagnostic process
- Definition of nosological units
- Epidemiology and etiological factors leading to the development of the disease
- Pathomorphology and pathogenesis of the development of the disease
- The main clinical manifestations of the disease
- Criteria for diagnosis and differential diagnosis of the disease
- Basic principles of etio-pathogenetic therapy
- Forecast and prevention diseases

Be able to:

- Purposefully collect an anamnesis of the life and illness of the child in compliance with ethical principles and norms.
- Assess the psychosomatic development of the body.
- Determine deviations in the objective state of the child in the age aspect, depending on the nosological unit.
- Make a plan for examining the patient in accordance with the nosology.
- Interpret clinical results of laboratory, biochemical, immunological, electrophysiological, functional, radiological and other instrumental research methods
- Conduct differential diagnosis
- Determine the patient's treatment plan
- Prescribe, monitor, adjust and evaluate individualized patient therapy
- Determine a set of preventive, dispensary and rehabilitation measures
- Prepare medical documentation as required

Own:

- Medical skills of research and assistance to patients in accordance with nosology, including the skills of urgent, emergency (resuscitation) measures

Attitude: to inform and demonstrate understanding of questions

Pre-requisites:

- Anatomy (macro- microanatomy)
- pathological anatomy
- Topographic anatomy
- normal physiology
- pathological physiology
- Biochemistry
- Microbiology, virology and immunology
- Basic pharmacology
- Bioethics

Post-requisites:

- Childhood diseases
- Pediatric surgery
- Children's infectious diseases
- Pediatric neurology
- Family medicine
- Medical genetics
- About public health

THEMATIC PLAN OF LECTURES

№	Lecture	Hours	Date
1.	Glomerulonephritis in children. Acute kidney injury (AKI). Chronic kidney diseases (CKD).	4	

2.	Urinary tract Infections in children	2	
	Total	6	

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1.	Acute glomerulonephritis in children.	4	
2.	Acute kidney injury (AKI) in children. Chronic kidney diseases in children (CKD)	2	
3.	Urinary tract Infections in children. Diagnostics and treatment	2	
	Total	8	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

№	Theme of independent work	Hours	Date
1.	Indications for a genetic test in nephrotic syndrome	1hrs	
2.	Complication of Nephrotic syndrome	1hrs	
3.	Complication of Nephritic syndrome	1hrs	
4.	Diagnostics and therapy tactics of primary FSGS	1hrs	
5.	Diagnostics and therapy tactics of secondary FSGS	1hrs	
6.	Diagnostics and therapy tactics of IgA-nephritis	1hrs	
7.	Diagnostics and therapy tactics of C3-glomerulonephritis	1hrs	
8.	Approach to UTI in primary care	1hrs	
9.	Diagnostics and therapy tactics of recurrent UTI	1hrs	
10.	VUR in child	1hrs	
11.	Diagnostics and therapy tactics of Secondary Hyperparathyroidism in Children with CKD	2hrs	
12.	Diagnostics and therapy tactics Renal anemia in Children with CKD	2hrs	
13.		Total: 14hrs	

Recommended reading for the discipline:

No	Authors	Title	The year of publishing	publishing house	Availability in the IHSM library (number)
1	Kliegman RM, Geme III JW	Nelson textbook of pediatrics. Vol. 1.- 21th ed.	2020	9 996 128 296	50
2	Ghai OP, Paul VK, Bagga A.	Essentials of pediatrics.-8th ed.	2013	978-81-239-2334-5	9
3	Rafikova S., Alekseev V.	Children's Nutritional Abnormalities	2013	978-9967-27-179-1	109
4	Alekseev.V., Starodubetz.U., Isakova F.	Introduction to Pediatrics: Compendium for foreign student	2012	978-9967-26-670-4	342
5	Ghai OP, Paul VK, Bagga A.	Essentials Pediatrics.-6th ed.	2005	81-239-1163-7	94
6	Behraman RE	Nelson essentials of pediatrics. -4th ed.	2002	0-7216-9406-3	12
7	Nelson., Richard E. Berhman, Robert M. Kliegman	Essentials of Pediatrics	2000	4th	12
8	A Parthasarathy	Case Scenarios in Pediatric and Adolescent Practice	2014	1st edition -	http://library.ism.edu.kg/Online_Library/eBooksDetails.aspx?id=288

9	Graham TP	Recommendations for Training in Pediatric Cardiology	2005	7th -E d -	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=938
10	William W. Hay Jr, et al By McGraw	Current Pediatric Diagnosis & Treatment	2002	16th Ed	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=57
11	Kenneth B Roberts MD By Lippincott Williams & Wilkins Publishers	Manual of Clinical Problems in Pediatrics	October 2000	5th edition	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=230
12	Pervez Akber Khan	"Basis of Pediatrics"	2000	7th -E d -	https://ketabton.com/book/14837

Additional:

No	Authors	Title	The year of publishing	publishing house	Availability in the IHSM library (number)
1	Steinberg E, Eknayan G, Levin N, Eschbach J, Golper T, Owen W, Schwab S	Dialysis Outcomes Quality Initiative Clinical Practice Guidelines:	2000	36 : 1-11	National Kidney Foundation- Dialysis Outcomes Quality Initiative Clinical Practice Guidelines. Dis 36:1-11
2	Shaikh N, Morone NE, Bost JE, Farrell MH. Pediatric Infect Dis J2Apr;27(4)	Prevalence of urinary tract infection in childhood: a metaanalysis .	2008	302-8 _	Pediatr Infect Dis J 2008 Apr;27(4):302-8.
3	Zorc JJ, Levine DA, Platt SL	Clinical and demographic factors associated with urinary tract infection in young febrile infants.	2005	644-8.	Pediatrics 2005 Sep;116(3):

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):

current score - 40 points

independent work - 20 points

control score (final assessment of knowledge per unit) - 40 points

Maximum score - 100 (40+20+40)

Criteria for grading for the discipline

Maximum score	Intervals			
	"unsuccessful."	"satisfying ."	"Fine"	"Great"
Current control - 40	0-23	24-30	31-35	36-40
Interval Criteria	Does not complete the task, does not know and does not understand the lecture material of the lesson, which	Performs the task not full, has gaps in the assimilation of lecture material, has difficulty in applying knowledge to solve situational problems	Completes the task in full, knows the lecture material, but sometimes makes mistakes when solving situational problems and test questions	Completes the task in full, easily applies knowledge and skills in solving situational problems and test questions, rarely makes

	prevents further assimilation of the program; cannot apply the acquired knowledge to solving situational problems, test questions. Does not answer teacher's questions Does not have practical skills when examining a patient	problems, test questions; does not fully and accurately answer the questions of the teacher. When examining a patient, he has poor practical skills	questions, understands the main content of the lecture material, gives correct answers to the teacher's questions. When examining a patient, he partially possesses practical skills	mistakes, gives complete and correct answers to the teacher's questions. When examining a patient, he has full practical skills
Independent work - 20	0-11	12-14	15-17	18-20
Interval Criteria	Presentation, report, table, situational task are missing	The content of the presentation, report, tables correspond to the given topic, the sequence of presentation of theoretical issues is violated: etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnosis, treatment and prevention. Situational tasks contain a little description of a clinical case	The content of the presentation, report, tables does not fully correspond to the given topic, the sequence of presentation of theoretical issues (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnosis, treatment and prevention) is not fully preserved. Situational tasks incompletely contain a description of a clinical case	The content of the presentation, report, tables correspond to the given topic, the sequence of presentation of theoretical issues (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnosis, treatment and prevention) is fully preserved. Situational tasks contain a description of the clinical case in its entirety
Line control (module) - 40	0-23	24-30	31-35	36-40
Interval Criteria	Does not know the answers to test questions and situational tasks	Poor knowledge of answers to test questions and situational tasks	Knows well the answers to test questions and situational tasks	Knows the answers to test questions and situational tasks

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).

- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-5 points.

Academic Ethics Policy.

- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-5 points.

Guidelines for the lessons of the discipline

Key questions covered in lesson #1.

1. Definition and principles of diagnostics of primary glomerulonephritis

2. List of investigation of primary glomerulonephritis
3. Definition and principles of diagnostics of secondary glomerulonephritis
4. List of investigation of secondary glomerulonephritis:
 - lupus nephritis, Anti-GBM glomerulonephritis, poststreptococcal nephritic syndrome, Shönlein-Henoch nephritis
5. Definition and principles of diagnostics of Nephritic syndrome
6. Treatment of Nephritic syndrome in children
7. Definition and principles of diagnostics of Nephrotic syndrome
8. Treatment of first episodes of primary Nephrotic syndrome in children
9. Treatment of relapse of primary Nephrotic syndrome in children
10. Steroid depend nephrotic syndrome – definition, principles of treatment
11. Steroid resistance nephrotic syndrome – definition, principles of treatment
12. **To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:**

Standard form (solution/tab)	Calculation doses of medicine (mg/kg; ml/day....)	Group of Medicine
Prednisoloni		
Lasix		
Torasemidum		
Neoral		
Takrolimus\Prograf		
Sellsept		
Enalapril		
Amlodopini		
Lozartan		
Atorvastatins		
Methylprednisolony		
Ketosteril		

Recommended reading for this discipline:

1. Rodriguez-Iturbe B, Musser JM. The current state of poststreptococcal glomerulonephritis. J Am Soc Nephrol 2008; 19:1855.
2. Kanjanabuch T, Kittikowit W, Eiam-Ong S. An update on acute postinfectious glomerulonephritis worldwide. Nat Rev Nephrol 2009; 5:259.
3. Lewy JE, Salinas-Madrigal L, Herdson PB, et al. Clinico-pathologic correlations in acute poststreptococcal glomerulonephritis. A correlation between renal functions, morphologic damage and clinical course of 46 children with acute poststreptococcal glomerulonephritis. Medicine (Baltimore) 1971; 50:453.
4. Rodriguez-Iturbe B. Postinfectious glomerulonephritis. Am J Kidney Dis 2000; 35:XLVI.
5. <https://link.springer.com/article/10.1007/s00467-022-05639-6#article-info>
6. Nephrotic syndrome in children: prediction of histopathology from clinical and laboratory characteristics at time of diagnosis. A report of the International Study of Kidney Disease in Children. Kidney Int 1978; 13:159.
7. Veltkamp F, Rensma LR, Bouts AHM, LEARNS consortium. Incidence and Relapse of Idiopathic Nephrotic Syndrome: Meta-analysis. Pediatrics 2021; 148.

Key questions covered in lesson #2.

1. Rapidly Progressive glomerulonephritis - definition, principles of treatment
2. Inspection and evaluation of URINE OUTPUT (oliguria, anuria).
3. Definition and principles of diagnostics of Acute Kidney Injury (AKI) according AKIN
4. Definition and principles of diagnostics of Acute Kidney Injury (AKI) according pediatric RIFLE-criteria's
5. Principles of DIAGNOSTIC PRERENAL AKI
6. Principles of treatment of PRERENAL AKI
7. Principles of DIAGNOSTIC RENAL AKI
8. Principles of treatment of RENAL AKI
9. Principles of DIAGNOSTIC POSTRENAL AKI
10. Principles of treatment of POSTRENAL AKI
11. DIAGNOSTIC OF AKI'S COMPLICATION
12. TREATMENT OF AKI'S COMPLICATION
13. Indication to Acute dialysis in case of AKI
14. Variant of outcomes of AKI
15. Definition of CHRONIC KIDNEY DISEASE (CKD)

16. Clinical, laboratory signs and principles treatment of CKD I-II-III-IV-V

17. **To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:**

Name of theme		
Erythropoietin Recormon		
Calcitriol		
VENOFER		
Ketosteril		

Recommended reading for this discipline:

1. *Pediatr Clin North Am.* 2013 Jun;60(3):669-88 - PubMed
2. *Pediatr Crit Care Med.* 2014 Jun;15(5):417-27 - PubMed
3. *Crit Care Med.* 1996 May;24(5):743-52 - PubMed
4. *Intensive Care Med.* 2012 Apr;38(4):542-56 - PubMed
5. *Crit Care Med.* 2010 Mar;38(3):933-9 - PubMed
8. Kidney Disease: Improving Global Outcomes (KDIGO) CKD work group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Int Suppl* 2013; 3: 1–150 [Google Scholar]
9. Kidney Disease: Improving Global Outcomes (KDIGO) Glomerulonephritis Work Group. KDIGO clinical practice guideline for glomerulonephritis. *Kidney Int Suppl* 2012; 2: 139–274 [Google Scholar]
10. Seikaly MG, Salhab N, Gipson D et al.. Stature in children with chronic kidney disease: analysis of NAPRTCS database. *Pediatr Nephrol* 2006; 21: 793–799 [PubMed] [Google Scholar]
11. Rodig NM, McDermott KC, Schneider MF et al.. Growth in children with chronic kidney disease: a report from the chronic kidney disease in children study. *Pediatr Nephrol* 2014; 29: 1987–1995 [PMC free article] [PubMed] [Google Scholar]
12. Keithi-Reddy SR, Singh AK. Hemoglobin target in chronic kidney disease: a pediatric perspective. *Pediatr Nephrol* 2009; 24: 431–434 [PubMed] [Google Scholar]

Key questions covered in lesson #3.

1. Determination and tactics therapy in asymptomatic /non pathological bacteriuria
2. Determination and tactics therapy in symptomatic / pathological bacteriuria- Indication to take urine culture by catheterization method, methodology of this test
3. Diagnosis of complicated urinary tract infections
4. Diagnosis of uncomplicated urinary tract infections
5. Determination of the starting antibiotic at a urinary tract infection
6. The concept and definition of a stepped of antibacterial therapy at a urinary tract infection
7. **To prepare Recipes on Medicine on each theme according scheme, this must be prepared:**

Name of theme		
Standard form (solution/tab)	Calculation doses of medicine (mg/kg; ml/day....)	Group of Medicine
Clotrimaxazoli		
Gentamycini		
Cephtriaxoni		
Amoxacillini		

Recommended reading for this discipline:

1. Subcommittee on Urinary Tract Infection, Steering Committee on Quality Improvement and Management, Roberts KB. Urinary tract infection: clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months. *Pediatrics* 2011; 128:595.
2. Williams G, Craig JC. Long-term antibiotics for preventing recurrent urinary tract infection in children. *Cochrane Database Syst Rev* 2011; :CD001534.
3. SUBCOMMITTEE ON URINARY TRACT INFECTION. Reaffirmation of AAP Clinical Practice Guideline: The Diagnosis and Management of the Initial Urinary Tract Infection in Febrile Infants and Young Children 2-24 Months of Age. *Pediatrics* 2016; 138.

Methodological instructions for the implementation of independent work on the discipline

Each student of group must prepare project of THE ONE THEME consisting of 10 slides with less text and in view pictures, scheme, charts

The first slide should include “IHSM”, “Department of pediatrics”, “the theme of presentation”, “the full name of the student”, group, semester, “the data of teacher”, the filing date, and the last slide - list of references, resources.

Assessment of Independent work includes: design, content and answering.