INTERNATIONAL HIGHER SCHOOL OF MEDICINE

DEPARTMENT PEDIATRICS

SYLLABUS
PEDIATRIC ENDOCRINOLOGY

2022-2023 academic year
for students of medical faculty
3 course VI semester, groups ___
1,0 credits (36 h, including auditorial 16 h, independent work – 20 h)

Lecturer:	**Name: Isakova Feruza** +996707932178 (Whatsapp) Email: isakova.fb@gmail.com
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The Syllabus is considered
at the meeting of the department of _Pediatrics__
Protocol №___8__dated__14/06___2023
Head of the department_____

Course Objective: PEDIATRICS ENDOCRINOLOGY study

- Ability to diagnose, treat and prevent the most common endocrine diseases of childhood, accounting the age characteristics of a growing child;
- Development the independent clinical thinking aimed at the effective use of the acquired knowledge in providing medical care to children with the most common endocrine pathology;
- Development the practical skills in diagnosing endocrine diseases and providing medical care to children with endocrine pathology.

After study of the discipline the student must:

Knowledge:

1. Classify Normal values of plasma glucose – fasting, postprandial, mm/L, mg/dL
2. Define Symptoms and laboratory Criteria for Diabetes Mellitus
3. Discuss about DKA:
   1) Etiology, clinical manifestation of mild, moderate, severe, laboratory diagnostic,
   2) Evaluation degree dehydration in DKA
   3) Assessment level of consciousness – Glasgow coma scale
   4) Calculation fluid and hourly rate for transfusion in different degree of dehydration in DKA
4. Describe Hypoglycemia etiology (diabetic and nondiabetic), clinical manifestation, laboratory diagnostic, treatment according severity;
5. Describe OGTT – indication, procedure, interpretation of results
6. Describe DM1 Insulin therapy
7. Discuss Congenital hypothyroidism – etiology, clinical manifestation, labs, treatment
8. Discuss Role of Iodine in thyroid function. Iodine deficiency disorders and its prevention.
9. Discuss Chronic lymphocytic thyroiditis: etiology, clinical manifestation, labs, treatment
10. Discuss Grave's disease - etiology, clinical manifestation, labs, treatment
11. Discuss Growth hormone deficiency - etiology, clinical manifestation, labs, treatment
12. Discuss CAH – etiology, clinical manifestation, labs, treatment
13. Describe Neonatal screening for congenital hypothyroidism and CAH – significance, procedure, screening tests

Be able to (Skill):

1. Demonstrate Dehydration inspection and assessment Inspection of skin
2. Perform under supervision Assessment level of consciousness (Glasgow coma scale)
3. Demonstrate Inspection and assessment blood pressure of children. Video Measurement of Blood pressure
4. Demonstrate Inspection of the child with DM1 to detect intermediate complications - lypohypertrophy, puberty delay, growth delay (weight-for-age, height-for-age, BMI-for-age) Anthropometric measurements – weight, height, arm span,
5. Demonstrate Inspection of the child with DM1 to detect long-term complications – retinopathy, nephropathy
6. Interpret results of urine test – urine output, polyuria, ketonuria, glucosuria, hyperstenuria, proteinuria
7. Interpret result of CBC, serum tests
8. Demonstrate Thyroid examination Video Thyroid examination OSCE

Attitude:

1. Demonstrate understanding of Inspection and assessment blood pressure of children.
2. Counsel a short child
3. Inform for hormonal investigation
4. Inform about proper treatment

Pre-requisites:

- Module Endocrine system IV semester.
- Anatomy (macro- microanatomy)
- Normal physiology
- Pathology
- Topographic anatomy
- Biochemistry
- Microbiology, virology and immunology
- Basic pharmacology
- Bioethics

Post-requisites:

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

THEMATIC PLAN OF LECTURES

№	Lecture	Hours	Date
1.	Diabetes mellitus in children	2	
2.	Thyroid disorders in children	2	
3.	Pituitary disorders in children	2	
4.	Congenital adrenal diseases in children	2	
	Total	8	

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1.	Diabetes mellitus in children	2	
2.	Thyroid disorders in children	2	
3.	Growth hormone deficiency Congenital adrenal diseases in children.	2	
4.	Module of unit 8 Pediatric Endocrinology	2	
	Total	8	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

№	Theme of independent work	Hours	Date
1.	The etio-pathogenesis, clinical approach and management of an unconscious child with DKA	4	1st lesson
2.	The obesity in adolescents: the etio-pathogenesis, clinical features and management	5	2nd lesson
3.	The etio-pathogenesis, clinical features and management of a child with short stature	3	3rd lesson
4.	Assessment of a child with short stature: taking history, examination and the referral criteria for growth related problems	3	3rd lesson
5.	Precocious and delayed Puberty: the etio-pathogenesis, clinical features and management	5	4th lesson
	Total	20	

Recommended reading for the discipline:
Basic:

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
4	Alekseev.V, Starodubetz.U ., Isakova F.	Introduction to Pediatrics: Compendium for foreign student	2012	978-9967-26-670-4	342
8	A Parthasarathy	Case Scenarios in Pediatric and Adolescent Practice	2014	1st edition -	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=288
12	Pervez Akber Khan	"Basis of Pediatrics"	2000	7th -E d -	https://ketabton.com/book/14837

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)

Grading system for student's achievements

Criteria for grading for the discipline				
Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
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 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	Performs the task not in full, has gaps in the assimilation of lecture material, has difficulty in applying knowledge to solve situational problems, test questions; does not fully and accurately answer the questions of the teacher. When examining a patient, he has poor practical skills	Completes the task in full, knows the lecture material, but sometimes makes mistakes when solving situational problems and test 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	Completes the task in full, easily applies knowledge and skills in solving situational problems and test questions, rarely makes 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 partially 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 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. Normal values of plasma glucose – fasting, postprandial, mm/L, mg/dL
2. Symptoms and laboratory Criteria for Diabetes Mellitus
3. DKA:
   5) Etiology, clinical manifestation of mild, moderate, severe, laboratory diagnostic,
   6) Evaluation degree dehydration in DKA
   7) Assessment level of consciousness – Glasgow coma scale
   8) Calculation fluid and hourly rate for transfusion in different degree of dehydration in DKA
4. Hypoglycemia etiology (diabetic and nondiabetic), clinical manifestation, laboratory diagnostic, treatment according severity;
5. OGTT – indication, procedure, interpretation of results
6. Insulin therapy:
   1) Rules for the insulin injection technique.
   2) Side effect of injection technique.
   3) Pharmacokinetics of recombinant and analogs of insulin: duration, onset and peak of the hypoglycemic effect. Fill the following table 1.
   4) **To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:**

	Standard form	**Onset**	**Peak**	**Duration**	**Time of injection**
Insulin Regular					
Insulin NPH					
LisPro					
Glargin					
Aspart					
Detemir					

Recommended reading for lesson #1:

1. Ghai O.P. Pediatrics. 8th ed. Pp – 541 – 548
2. ISPAD Clinical Practice Consensus Guidelines 2014 Compendium Diabetic ketoacidosis in children and adolescents with diabetes *Pediatric Diabetes 2014: 15(Suppl. 20): 154–179*
   https://c.ymcdn.com/sites/www.ispad.org/resource/resmgr/Docs/CPCG_2014_CHAP_11.pdf
3. Assessment level of consciousness – Glasgow coma scale
4. Calculation fluid and hourly rate for transfusion in different degree of dehydration in DKA

https://www.youtube.com/watch?v=r2tXTjb7EqU&ab_channel=AlilaMedicalMedia
https://www.youtube.com/watch?v=cD6ZL91CUMo&ab_channel=OPENPediatrics insulin DKA
https://www.youtube.com/watch?v=5T0q0DMAzbY&ab_channel=NEJMvideo – rehydration DKA
https://www.youtube.com/watch?v=fSYFsrurYKI&ab_channel=OPENPediatrics – development of T1DM

Key questions covered in lesson #2.

1. Congenital hypothyroidism – etiology, clinical manifestation, labs, treatment
2. Role of Iodine in thyroid function. Iodine deficiency disorders and its prevention.
3. Chronic lymphocytic thyroiditis: etiology, clinical manifestation, labs, treatment
4. Grave's disease - etiology, clinical manifestation, labs, treatment
5. Neonatal screening for congenital hypothyroidism and CAH – significance, procedure, screening tests
6. Complete the table of medicines

Standard form (solution/tab)	**Calculation doses of medicine** (mg/kg; ml/day) for children	**Group of Medicine**
Propylthiouracile		
Methimazole		
Propranolol		
Atenolol		
	0-3 mo -	

Sodium-levothyroxine (According age of child)	3-8 mo -	
	8-12 mo -	
	1-3y -	
	3-6 y -	
	6-10 y -	

Recommended reading for the lesson 2:

5. «Newborn Screening for Congenital Hypothyroidism: Recommended Guidelines», AAP Section on Endocrinology and Committee on Genetics, and American Thyroid Association Committee on Public Health, http://www.pediatrics.org
6. Setian N. Hypothyroidism in children: diagnosis and treatment. J Pediatr (Rio J). 2007;83 (5 Suppl):S209-216. http://www.scielo.br/pdf/jped/v83n5s0/en_v83n5Sa13.pdf

Key questions covered in lesson #3.

1) Growth hormone deficiency - etiology, clinical manifestation, labs, treatment
2) CAH – etiology, clinical manifestation, labs, treatment
3) Complete the table of medicines

Standard form (solution/tab)	**Calculation doses of medicine** (mg/kg; ml/day) for children	**Group of Medicine**
Prednisone		
Genotropin		

Recommended reading for lesson #3:

1. Ghai O.P. Pediatrics. 8th ed. Pp 511 – 513, 516 – 521, 526 – 528.
2. «The Short Child» Maria G. Vogiatzi, MD, Kenneth C. Copeland, MD, *Pediatrics in Review Vol. 19 No. 3 March 1998*
3. «Consensus in Pediatrics: Growth Assessment and Growth Failure» http://jcem.endojournals.org/content/85/11/3990.full
4. «Congenital Adrenal Hyperplasia Due to Steroid 21-hydroxylase Deficiency: An Endocrine Society Clinical Practice Guideline» *Journal of Clinical Endocrinology & Metabolism,* September 2010, Vol. 95(9):4133–4160. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2936060/

Key questions covered in lesson #4.

- Presentation of Project
- Demonstration skills
- MCQ
- Scoring

Methodological instructions for the implementation of independent work on the discipline

Each student of group must study himself topics of SIW.
Team of 3 students must prepare and present the 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.
Questions of SIW will be included to Module MCQ.