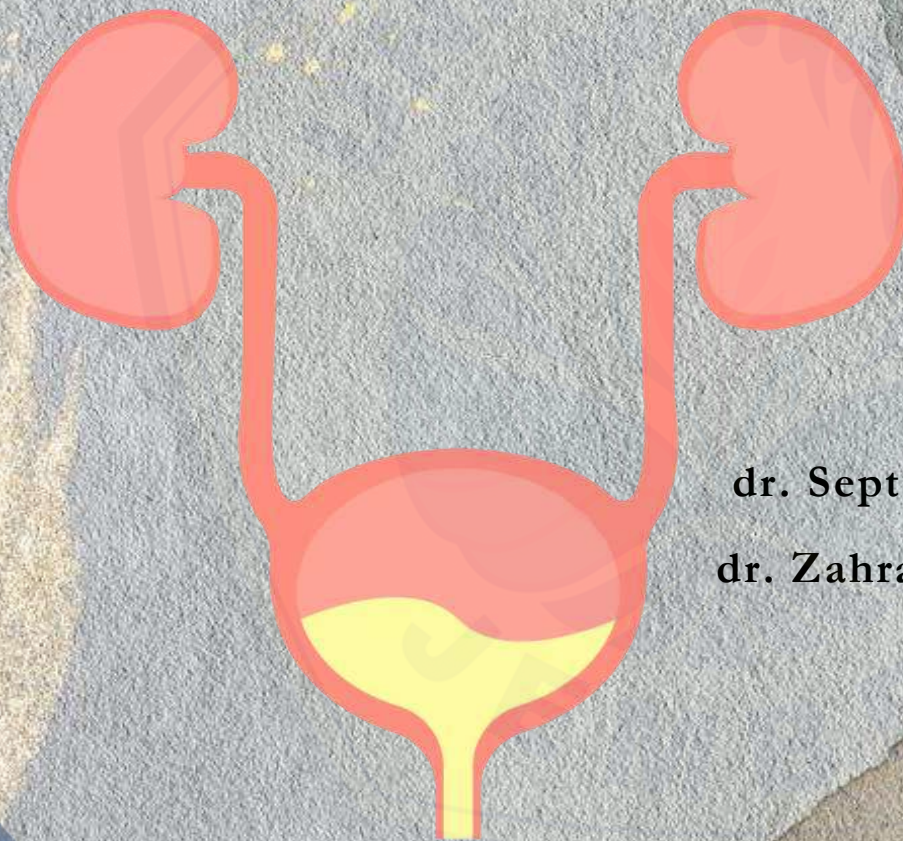


Module for Tutor

The 11th Block: Nefrourologi



Penyusun:

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Fakultas Kedokteran
Universitas Jember

2023





MODULE FOR TUTORS

**THE 11th BLOCK
NEPHRO-UROLOGY**

Authors:

**Septa Surya Wahyudi
Zahrah Febianti**

**FACULTY OF MEDICINE
UNIVERSITY OF JEMBER
2023**

Praise Allah SWT for His grace and guidance that allow the proper completion of writing this nephrourology learning module. This writing of this module was funded by the HPEQ project fund to improve the previous modules. In this excretion block learning module, several conceptual writing changes occurred, i.e. the topic tree and several learning objectives, on which we base changes on the 2012 curriculum blueprint. This module is also much more comprehensive than the previous excretion block modules, i.e. in concordance with the guideline of the learning module as determined by the HPEQ team.

This block is the eleventh block of the whole set of blocks within the curriculum of the Medical Education in Faculty of Medicine, Jember University. As in the previous blocks, in this block, students are expected to prepare themselves as medical students and future doctors to build a comprehensive understanding, especially about the excretion block, as a basis of medical science. Therefore, this block discusses the basics of the nephrourology system and diseases that might affect it.

Within this module, there are five scenarios for triggers for discussion. The discussion of these scenarios should be completed in five weeks, followed by the examination in the sixth week. This module utilizes problem-based learning (PBL) with tutor-facilitated discussion as the core strategy. Other learning activities include lectures, practical work, and clinical skill training to enable the achievement of the learning objectives.

We sincerely hope this module could help students achieve a good understanding of the nephrourology system. We express our deep gratitude to the HPEQ project, lecturers, colleagues, and all parties involved in creating this module. We hope this module to be properly applied, in concordance with the intended learning objectives. Criticism and advice to better develop this module would surely be highly appreciated.

Jember, March 2023

Authors

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I. INTRODUCTION

(a) General Overview of the Block

This block discusses the nephrourology system of humans and the abnormalities and diseases of this system. This topic would serve as a basis and a developmental measure for students in learning medical science in the future.

(b) General Aims of the Block

This block aims to equip students with the ability to understand the basic science of the excretory system including its structure and function; and the developed knowledge related to disorders and diseases related to this system. This way, students should be able to detect, examine, diagnose, and treat the diseases and disorders of the human nephrourology system.

(c) Interrelation with Other Blocks

During the study of the human excretory system in this block, students should also pay attention to its interrelatedness with other organ systems in the body. This nephrourology block is highly interrelated with the following blocks: Humanities and Health Problems, Life Cycle, Endocrine and Metabolism, Reproduction, Neurobehaviour, Agromedicine & Tropical Diseases, Neurosensory, Oncology & Hematology, Emergency Medicine & Traumatology.

(d) Learning Objectives of the Block

After completing this block, students are expected to have mastered the following abilities:

1. **Demonstrate noble professional behavior**
2. **Practice effective communication.**
3. **Understand the scientific basis of medical science.**
4. **Understand the management of agromedicine diseases in the field of nephrourology**

(e) Topics for Tutor-Facilitated Small Group Discussion (Tutorial)

Students should understand several topics within this block as follow:

- Infectious diseases of the urinary tract, including urinary tract infection, acute glomerulonephritis, chronic glomerulonephritis, chronic renal disease, nephrotic syndrome, renal colic, urinary stone diseases or urinary calculi without colic, symptomatic polycystic kidneys, uncomplicated pyelonephritis, acute tubular necrosis, chancroid, condyloma acuminata, genital herpes simplex, gonorrhea, syphilis.
- Congenital abnormalities of male genitalia, including hypospadias, epispadias, undescended testes/cryptorchidism, retractile testes, testicular torsion, priapism, bladder extropy, and horseshoe kidney.
- Acquired abnormalities of the male genitalia, including hydrocele, phimosis, paraphimosis, epididymitis, prostatitis, spermatocele, urinary incontinence, nocturnal and diurnal enuresis, Peyronie disease, and benign prostatic hyperplasia
- Trauma of the male genitalia, including urethral rupture, bladder rupture, renal rupture, and acute kidney injury.

(f) Topics for Practical Work

To master the competence of this block, students need a scientific base supported by the following practical works:

1. Anatomy: Anatomical structure of the excretory organs
2. Histology: Histological structure of the urinary system (advanced) and the male genitalia
3. Biochemistry: Vitamin
4. Anatomical Pathology: Pathology of the urinary tract and the male genitalia

5. Microbiology: Urine bacteriology
6. Pharmacology: Medications of the excretory system

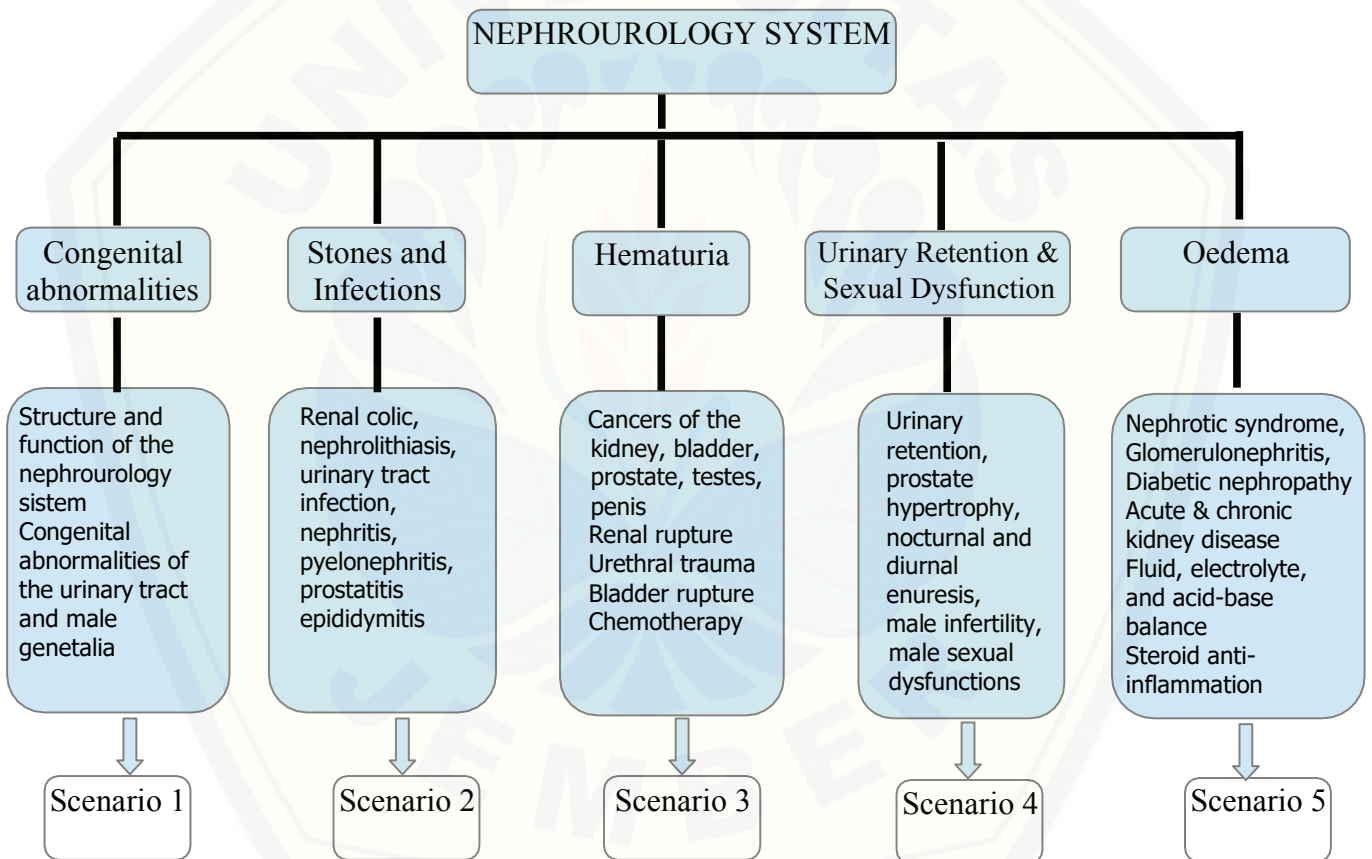
(g) Topics for Clinical Skill Training

1. Anamnesis of diseases of the urogenital system
2. Physical examination of the kidneys and male genitalia
3. Preparation and laboratory examination of simple urinalysis
4. Supporting examination of the nephrourology system
5. Prescription of the medications acting at the nephrourology system

(h) Involved Departments/Laboratory

Involved departments or laboratories in learning the nephrourology system are as follow: Anatomy, Histology, Physiology, Biochemistry, Microbiology, Anatomic Pathology, Clinical Pathology, Radiology, Pharmacology, Nutrition, Internal Medicine, Anesthesiology, Pediatrics, Surgery, and Neurology.

(i) Topic Tree



(j) Block Prerequisites

To be able to master the competence of this block, students must have built the scientific basis from the previous blocks, including Humanities and Health Problems, Life Cycle, Endocrine and Metabolism.

(k) List of Competences based on SKDI 2012

No	List of Diseases	Level of Competence
1	Urinary tract infection	4A
2	Acute glomerulonephritis	3A
3	Chronic glomerulonephritis	3A
4	Gonorrhea	4A
5	Renal cell carcinoma	2
6	Wilms. Tumor	2
7	Acute kidney injury	2
8	Chronic kidney disease	2
9	Nephrotic syndrome	2
10	Renal colic	3A
11	Urinary tract stones (bladder, ureter, urethra) without colic	3A
12	Symptomatic polycystic kidney	2
13	Horseshoe kidney	1
14	Pyelonephritis without complication	4A
15	Acute tubular necrosis	2
Male Genitalia		
16	Hypospadias	2
17	Epispadias	2
18	Undescended testes/cryptorchidism	2
19	Retractile testes	2
20	Varicocele	2
21	Hydrocele	2
22	Phimosis	4A
23	Paraphimosis	4A
24	Spermatocele	2
25	Epididymitis	2
26	Prostatitis	3A
27	Testicular torsion	3B
28	Urethral rupture	3B
29	Bladder rupture	3B
30	Renal rupture	3B
31	Ureter carcinoma	2
32	Testicular seminoma	1
33	Testicular teratoma	1
34	Benign prostate hyperplasia	2
35	Prostate carcinoma	2
36	Urethral stricture	2
37	Priapism	3B
38	Chancroid	3A
Male Infertility		
39	Infertility	3A
40	Erectile dysfunction	2
41	Ejaculation problems	2

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II. LEARNING ACTIVITIES

This competency-based curriculum is conducted with learning strategies based on the new paradigm of medical education known as the SPICES that utilize problem-based learning (PBL) at its core strategy. The learning proceeds based on a module containing scenarios as triggers for learning during the tutor-facilitated discussion. Students gather knowledge from independent learning, lectures, expert consultation, and practical work. The knowledge gathered is discussed within the students' group as scheduled, guided by a facilitator. To train the clinical skill, students are trained within the skill laboratory, field practice, and clinical work practice.

1. Tutorial-facilitated Small Group Discussion

The tutor-facilitated discussion proceeds with 10-15 students as participants and a tutor as a facilitator. Students are presented with a scenario as a trigger for discussion. The discussion for one scenario occurs in two meetings separated by a three or four days interval and follows the **seven jumps** method as indicated below:

- (1) Clarify unfamiliar terms/concepts,
- (2) Define the problem,
- (3) Brainstorm to find answers to the problems based on prior knowledge,
- (4) Summarize and organize the proposed answers on step 3,
- (5) Determine the learning objectives,
- (6) Independent learning,
- (7) Make conclusions based on the knowledge gathered.

Steps 1 to 5 are conducted in the first meeting, step 6 is done independently, and step 7 occurs during the second meeting.

2. Lecture

Lectures improve students' understanding by clarifying complicated or specialistic concepts or theories, hence the required presence of an expert. Lectures come in the form of problem-based interactive consultation. They can proceed on a fixed scheduled or requested by students when necessary.

3. Practical Work

Practical works improve students' understanding of specific topics and develop students' skills to perform laboratory works. Several topics are easier to understand by performing practical works hence its necessity.

4. Clinical Skill Training

Basic clinical skill training improves students' medical skills by utilizing learning models including mannequins, phantoms, simulated patients, and other available modalities. Topics for the training include anamnesis and physical examination of the kidneys and the male genitalia, prescription of medications related to the excretory system, and specific skill training such as simple urinalysis and interpretation of results obtained from the supporting examinations of the excretory system such as BNO, IVP, etc.

5. Expert Consultation

Sessions of expert consultations emerge as requested by the students supposed they encounter difficulties in understanding certain concepts or theories during the group discussion or independent learning. The expert consultation could be conducted within small groups or a big class as necessary.

6. Independent Learning

During independent learning, students gather broader and deeper information on a topic related to the learning problems to help comprehend the scenario from a multidisciplinary point of view.

7. Evaluasi

The block evaluation occurs in the sixth week and includes components such as students' presence during the academic activities, ethics, and mastery of knowledge. Students should get a score of a **minimum of 60 for each assessment component** to pass the block examination. The weighing of each component of the grade is as follows:

- (1) CBT examination 75% (70% theory, 30% practical work)
- (2) Tutorial 25%

The final mark of the block is a 0-100 number with grades as follow:

NUMBER	GRADE	INDEX	PREDICATE
$A \geq 80$	A	4	Excellent
$75 \leq AB < 79$	AB	3,5	Very good
$70 \leq B < 75$	B	3	Good
$65 \leq BC < 70$	BC	2,5	Average good
$60 \leq C < 65$	C	2	Average
$55 \leq CD < 60$	CD	1,5	Insufficient
$50 \leq D < 55$	D	1	Insufficient
$45 \leq DE < 50$	DE	0,5	Highly insufficient
< 45	E	0	Highly insufficient

Regulations for the remediation test:

- If one or both components (block examination and/or tutor-facilitated small group discussion) is/are less than 60, students are considered failing the block and obliged to take the remediation test. Joining the remediation test means retaking both the theoretical knowledge (CBT) and the practical work examinations.
- Students with the grade of 60 or above but less than 70 are allowed but not obliged to join the remediation test with the maximum final grade of the remediation test is B
- The score used to determine the grade is the last score obtained, not the best score between the two examinations taken
- Students who are to take the remediation test should have registered in the academic department Faculty of Medicine by D-1 of the test date. Students who haven't registered until the appointed date are not allowed to take the remediation test.

Rule violation and fraud during the examination:

- All frauds performed during the whole process of the block examination are subjected to receiving the GRADE E as the sanction (FAILING THE BLOCK EXAMINATION).

III. Schedule of Lectures and Practical Works

ADMISSION YEAR OF 2021							
Date	Time	Monday	Tuesday	Wednesday	Thursday	Friday	
Week I 27 - 31 Maret 2023	05.10-06.50		Lec 3				
	07.00-07.50	MORNING CEREMONY	TKD 4	Pract 1 (P3)	TKD 4	Pract 3 (P1)	FESTIVE FRIDAY
	07.50-08.40	Tut 1.1					
	08.50-09.40		Tut 1.3				
	09.40-10.30	Lect 1		Pract 3 (P2)	Lect 4		
	10.40-11.30		Pract 1 (P4)				
	11.30-12.20					Break	
	12.30-13.20	Pract. 1 (P1)	Pract 2 (P1)	Pract 2 (P3)	Pract 3 (P3)	GEN. LECT	
	13.20-14.10						
	14.10-15.10					Lect 5	
	15.10-16.00	Pract 1 (P2)	Pract 2 (P2)	Pract 2 (P4)	Pract 3 (P4)	Lect 6	
	16.00-17.00						
	17.00-17.50	Lect 2					
	17.50-19.40						

Date	Time	Monday	Tuesday	Wednesday	Thursday	Friday	
Week 2 03-07 April 2023	05.10-06.50		Lect 9				
	07.00-07.50	APEL PAGI	TKD 4	Pract 4 (P3)	TKD 4	Pract 6 (P1)	Good Friday
	07.50-08.40	Tut 2.1					
	08.50-09.40		Tut 2.3				
	09.40-10.30	Lect 7		Pract 6 (P2)	Lect 10		
	10.40-11.30		Pract 4 (P4)				
	11.30-12.20						
	12.30-13.20	Pract 4 (P1)	Pract 5 (P1)	Pract 5 (P3)	Pract 6 (P3)	Good Friday	
	13.20-14.10						
	14.10-15.10						
	15.10-16.00	Pract 4 (P2)	Pract 5 (P2)	Pract 5 (P4)	Pract 6 (P4)		
	16.00-17.00						
	17.00-17.50	Lect 8					
	17.50-19.40						

*7 April 2023 = Friday Agung

Date	Time	Monday	Tuesday	Wednesday	Thursday	Friday	
Week 3 10-14 April 2023	05.10-06.50		Lect 13				
	07.00-07.50	APEL PAGI	TKD 4	Pract 7 (P3)	TKD 4	Pract 9 (P1)	FESTIVE FRIDAY
	07.50-08.40	Tut 3.1					

08.50-09.40						Tut 3.3	
09.40-10.30	Lect 11		Pract 7 (P4)		Pract 9 (P2)	Lect 14	
10.40-11.30							Break
11.30-12.20							GEN. LECT
12.30-13.20	Pract 7 (P1)	Pract 8 (P1)		Pract 8 (P3)		Pract 9 (P3)	
13.20-14.10							Lect 15
14.10-15.10	Pract 7 (P2)	Pract 8 (P2)		Pract 8 (P4)		Pract 9 (P4)	Lect 16
15.10-16.00							
16.00-17.00							
17.00-17.50	Lect 12						
17.50-19.40							

Date	Time	Monday	Tuesday	Wednesday	Thursday	Friday		
Week 4 17-21 April 2023	05.10-06.50		Lect 19			National Holiday Eid Al-Fitr		
	07.00-07.50	APEL PAGI						
	07.50-08.40	Tut 4.1	TKD 4	Pract 10 (P3)	TKD 4		Pract 12 (P1)	Tut 4.2
	08.50-09.40							Tut 4.3
	09.40-10.30	Lect 17		Pract 10 (P4)			Pract 12 (P2)	Lect 20
	10.40-11.30							
	11.30-12.20	Pract 10 (P1)	Pract 11 (P1)		Pract 11 (P3)		Pract 12 (P3)	
	12.30-13.20		Pract 11 (P2)		Pract 11 (P4)		Pract 12 (P4)	
	13.20-14.10	Pract 10 (P2)						
	15.10-16.00							
	16.00-17.00							
	17.00-17.50	Lect 18						
	17.50-19.40							

*21-23 April 2023 = National Holiday Eid Al-Fitr

Date	Time	Monday	Tuesday	Wednesday	Thursday	Friday		
Week 5 24-28 April 2023	05.10-06.50	National Holiday Eid Al-Fitr						
	07.00-07.50							
	07.50-08.40							FESTIVE FRIDAY
	08.50-09.40							
	09.40-10.30							
	10.40-11.30							
	11.30-12.20							
	12.30-13.20							
	13.20-14.10							
	14.10-15.10							
15.10-16.00								
16.00-17.00								

17.00-17.50			
17.50-19.40			

Date	Time	Monday	Tuesday	Wednesday	Thursday	Friday	
Week 6 1 sd 5 Mei 2023	05.10-06.50		Lect 23				
	07.00-07.50	APEL PAGI	TKD 4	Pract 13 (P3)	TKD 4	Pract 15 (P1)	FESTIVE FRIDAY
	07.50-08.40	Tut 5.1					
	08.50-09.40	Lect 21	Tut 5.3				
	09.40-10.30	Pract 13 (P1)		Pract 13 (P4)	Pract 15 (P2)		
	10.40-11.30		Lect 24				
	11.30-12.20	Pract 14 (P1)		Pract 14 (P3)	Pract 15 (P3)	Break	
	12.30-13.20		Pract 14 (P2)			Pract 14 (P4)	Pract 15 (P4)
	13.20-14.10	Lect 25					
	14.10-15.10		Lect 26				
	15.10-16.00	Lect 22					
	16.00-17.00						
	17.00-17.50						
	17.50-19.40						

List of Tutors

No	Name of Tutor	Group	Telephone
1.	dr. Jauhar Firdaus, M.Biotek	RKBI/A	081902713596
2.	dr. Septa Surya Wahyudi, Sp.U	B	08123479140
3.	dr. Zahrah Febianti, M.Biomed	C	085236827288
4.	dr. Azham Purwandhono, M.Si., Sp.N	D	081939621098
5.	dr. Adelia Handoko, M.Si	E	081232728010
6.	Dr. Ali Santosa, Sp.PD	F	08123475134
7.	Dr. dr. Yunita Armiyanti, M.Kes	G	0817543738
8.	dr. Ancah Caesarina, Ph.D	H	082245628388
9.	Dr. dr. Wiwien Sugih Utami, M.Sc	I	085232013825
10.	dr. Ida Sri Surani, M.Kes	J	081357484568
11.	dr. Yohanes Sudarmanto, Sp. THT-KL, M.Med	K	08113571792
12.	dr. Dwita Aryadina, M.Kes	L	081902713596
13.	dr. Elly Nurus Sakinah, M.Si	M	081953558047
14.	dr. Dini Agustina, M. Biomed	N	081336611668

LIST OF LECTURES

NO	Name of Lecturer	Lecture Topic
1	dr. Septa Sp.U / dr. Zahrah F, M.Biomed	Overview
2	Lab Histologi (Dr. dr. Dina Helianti, M.Kes)	Sistem Nefrourologi dan Ultrastruktur Nephron Dan Interstitium
3	Lab. Anatomi (dr. Septa, Sp.U)	Sistem Nefrourologi
4	Lab Faal (dr Adelia Handoko, M. Si)	Fisiologi Ekskresi
5	Lab Biokimia (dr. Ika, M.Biotech)	Air, Vitamin, dan Mineral
6	Lab Bedah/ Urologi	Kelainan Kongenital Pada Sistem Nefrourologi
7	Lab Bedah/ urologi	Kegawatdaruratan Urologi Non Trauma
8	Lab Farmakologi (dr Elly, Msi.)	Farmakologi Sistem Nefrourologi (Diuretik)
9	Lab Mikrobiologi (Dr.dr. Enny, M.Kes)	Mikroorganisme Penyebab Infeksi pada Sistem Saluran Kemih
10	Lab Bedah/ urologi	Disfungsi Seksual
11	Lab PK (dr. Pulong WP, Ph.D)	Urinalisis, Tes Fungsi Ginjal, Analisis Batu
12	Lab Penyakit Dalam (dr. Yuli Hermansyah, Sp.PD)	ISK, Nefritis Dan Pyelonefritis
13	Lab. Parasitologi (dr. Bagus Hermansyah, M.BioMed)	Infeksi parasit pada sistem nefrourologi dan komplikasinya

14	Lab Radiologi (dr. Heni, M.Kes., Sp.Rad)	Radiologi Abdomen, IVP, USG, CT Scan, MRI
15	Lab PA (dr Azham P, M.Si., Sp.N)	Patologi ginjal dan saluran kemih
16	Lab IKM (dr. Irawan, M.Sc., Sp.PD)	Nutrisi pada penyakit sistem nefrourologi
17	Lab Penyakit syaraf (dr. Komang, Sp.S)	Neurologi, Inkontinensia Urine, Retensio Urine
18	Lab Pediatri (dr. Gebyar Tri Baskoro, Sp.A)	SN, GNA Dan Hipertensi Pada Anak
19	Lab. PK (dr. Binar Rahma Utami, Sp.PK)	Analisis sperma
20	Lab. Biokimia (dr. Erfan Sp.An)	Gangguan Keseimbangan Cairan, Elektrolit Dan Asam Basa
21	Lab Penyakit Dalam (dr. Yuli Hermansyah, Sp.PD)	Acute Kidney Injury, GGA, GGK, Diabetic Nephropathy
22	dr. Al Munawir, PhD	Gangguan Nefrourologi di Masyarakat Agroindustri
23	Koordinator blok 11 (dr Septa)	Resume All material

LIST OF PRACTICAL WORKS

NO	Name of Instructor	TOPIC
1	Lab Histologi 1 (Dr. dr. Dina)	Histologi dan ultrastruktur sistem urinalis dan reproduksi laki-laki
2	Lab Anatomi (dr Septa)	Sistem nefrourologi
3	Lab Fisiologi (dr Adelia Handoko, M. Si)	Produksi urin
4	Lab Biokimia (Dr. dr. Hairrudin, M.Kes)	BUN dan Kreatinin
5	Lab Mikrobiologi (dr. Dini)	Pemeriksaan infeksi saluran kemih (ISK)--kultur urine
6	Lab PA (dr Azham)	Histopatologi nefrourologi
7	Lab Farmakologi (dr Elly)	Diuretik
8	Lab Parasitologi (dr. Bagus)	Pengamatan dan studi kasus infeksi parasit pada sistem urogenital
9	Lab. Histologi 2 (dr. Ayu)	Sistem reproduksi pria
10	Lab. Farmakologi (dr.Desie)	Penulisan Resep pada Anak

V. SCENARIO

SCENARIO 1: KELAINAN SEJAK LAHIR

1. Scenario

A 25-year-old woman in the obstetric ward who recently gave birth to a baby boy complained to the visiting pediatrician that the baby's urinary outlet was not located at the tip of his penis and that he had an inferiorly bent penis. The baby also had an enlarged right testis, while his left testis was not visible. The mother mentioned having a congenital renal abnormality herself. The doctor performed a physical examination and suggested proceeding to several radiology examinations.

2. Learning Objectives

- a. Describe the embryology and anatomy of nephrourology system, including the organ structure, the vascularization, and the innervation.
- b. Explain the histology of nephrourology system
- c. Describe the physiology of nephrourology system
- d. Describe the etiology, pathophysiology, sign and symptoms, work-up diagnosis, laboratory or radiology investigation, management, and prognosis of the **congenital disease of man genitalia** (epispadias, hypospadias, *undescended testes*, *retractile testes*, *hydrocele*, *phimosis*, *paraphimosis*, extropia bully)
- e. Explain the etiology, pathophysiology, sign and symptoms, supporting diagnosis, laboratory or radiology investigation, management, and prognosis of **congenital kidney disease** (symptomatic *polycystic kidneys* and *horse-shoe kidney*)

3. Subject

- a. Anatomy of the nephrourological system
- b. Histology and ultrastructure of nephrons and interstitium
- c. Physiology of the nephrourological system
- d. Abnormalities of men genitalia
- e. Congenital anomaly of the kidney

4. Clue

- a. Congenital anomaly of the nephrourological system
- b. Penis and scrotum deformity

5. Minimal Problems

- a. Structure and function of the nephrourological system
- b. Congenital anomaly of men genitalia and urinary system)

SCENARIO 2: PAINFUL WAIST AND FEVER

1. Scenario

A 25-year-old woman presented to the ER due to severe right lower back pain that started the day before. The pain radiated to the lower abdomen up to the right groin. The patient also complained of a fever that appeared four hours before admission. During the last month, she had been experiencing frequent urination with a positive history of cloudy urine, urine with pus, and urinary stones. Her husband had a history of painful urination and enlarged painful testes. Examination of the patient revealed a BP of 130/80 mmHg, HR 108 bpm, and temperature of 38.6°C. The laboratory examination revealed a leukocyte count of 15,000 /uL with thick urinary erythrocyte and leukocyte sediments. The ER doctor planned a follow-up examination and management.

2. Learning Objectives

- a. Explain the definition, etiology, pathophysiology, sign and symptom, work-up diagnosis, laboratory or radiology investigation, management, and prognosis of **renal colic**
- b. Describe the definition, etiology, pathophysiology, sign and symptom, work-up diagnosis, laboratory or radiology investigation, management, and prognosis of **urolithiasis** (kidney stone, ureteral stones, bladder stones, and urethral stones)
- c. Explain the definition, etiology, pathophysiology, sign and symptom, work-up diagnosis, laboratory or radiology investigation, management, and prognosis of **infection channel urine (GO and non-GO), nephritis, and pyelonephritis.**
- d. Identify and describe the mechanism of action of **antiseptic and antibiotics for urinary tract infection and kidney infection.**
- e. Explain the definition, etiology, pathophysiology, sign and symptom, work-up diagnosis, laboratory or radiology investigation, management, and prognosis of **prostatitis, orchitis, and epididymitis**

3. Subject

- a. Renal colic
- b. Causes of urinary tract infections (bacterial, viral, and fungal)
- c. Antiseptic and antibiotics
- d. Urinary Tract Infection (Nephritis, Pyelonephritis, cystitis)
- e. Male reproductive infections (Prostatitis, orchitis, Epididymitis)

4. Clue

- a. Fever
- b. renal colic
- c. Low back pain
- d. Urine murky

5. Minimal Problems

- a. Renal colic
- b. Uro lithiasis
- c. Urinary tract infection

SCENARIO 3: Red Urine

1. Scenario

A 65-year-old male presented to the ER due to intermittent red urine that started to happen two months ago. He also complained of right waist pain after falling down from the motorcycle and weight loss. He had a history of smoking 10-20 cigarettes per day. He works as a farmer. The family history revealed prostatic cancer suffered by the patient's late father. Examination of the patient revealed a BP of 140/90 mmHg, HR 100 bpm, anemic conjunctivae, and positive renal percussion pain on both sides. The blood examination revealed a Hb level of 6 mg/dl and a leukocyte count of 17,000 /uL with thick urinary erythrocyte sediments. The doctor also inquired if the patient had experienced any mechanical trauma on his abdomen and genitalia. The doctor then performed further supporting examinations to establish the diagnosis.

2. Learning Objectives

- a. Explain the definition, etiology, pathophysiology, sign and symptoms, differential diagnosis, laboratory / radiology investigations, initial management, prognosis, and determining appropriate referrals in cases of **hematuria**
- b. Describe the risk factors (farmers, smoking, etc.), sign and symptoms, work-up diagnosis, laboratory / radiology investigations, initial management, prognosis, and selection of appropriate referrals in cases of nephrourology **malignancy**, including: **adrenals cortical adenoma , renal cell carcinoma , wilm's tumor , prostate carcinoma , carcinoma testicles, carcinoma jar , And carcinoma penis**
- c. Explain the sign and symptoms, physical examination, laboratory / radiology investigations, initial management, prognosis, and appropriate referrals in case of **urogenital trauma** , includes: **renal, urethral, and bladder ruptures** .

3. Subject

- a. Hematuria
- b. Renal Carcinoma: cortical adenoma, renal Ca cells, Wilm's tumor, Prostate Ca
- c. Penis Carcinoma
- d. Urogenital trauma

4. Clue

- a. Anemia
- b. Flank mass
- c. Hematuria

5. Minimal Problems

- a. carcinoma
- b. Urogenital trauma

SCENARIO 4: INABILITY TO URINATE AND SEXUAL PROBLEM

1. Scenario

A 55-year-old male presented to the primary health center complaining of continuous urination with a weak stream and a sense of incomplete urination. Previously he was unable to urinate and had a history of urination with multiple streams. He also complained of penile erectile dysfunction. Occasionally he could maintain an erection, but not for long. He had had these complaints for a few years. The patient had been married for 30 years and had frequently consumed the vitality drugs, but he still had no children. The doctor then asked for the patient's permission to perform the digital renal examination to inquire further about his condition.

2. Learning Objectives

- a. Explain the definition, etiology, neurophysiology of micturition, classification, clinical symptoms, laboratory / radiology investigations, and management of **urination problems** (urinary retention and incontinence)
- b. Explain the definition, etiology, pathophysiology, clinical feature, laboratory / radiology investigations, initial management, referral mechanisms, and prognosis of **benign prostatic hyperplasia (BPH)**
- c. Explain the definition, etiology, pathophysiology, clinical feature, laboratory / radiology investigations, initial management, referral mechanism, and prognosis of **urethral stricture**
- d. Explain the definition, pathophysiology, clinical sign and symptoms, laboratory / radiology investigations, and management of **fertility disorders in men** and other disorders that interfere men fertility (testicular torsion, spermatocele, and varicocele)
- e. Explain the erection and ejaculation mechanism
- f. Explain the definition, pathophysiology, clinical sign and symptoms, laboratory / radiology investigations, and management of **men sexual disorder** (priapismus, Peyroni's disease, erection and ejaculation disorder)

3. Subject

- a. Urinary incontinence
- b. Urinary Retention
- c. Prostate hypertrophy
- d. Urethra stricture
- e. Men infertility
- f. Erection disorder

4. Clue

- a. Frequent urination
- b. No-satisfied urination
- c. branched urination
- d. Erectile dysfunction
- e. Men infertility

5. Minimal Problems

- a. Incontinence
- b. Urinary retention
- c. Prostate hypertrophy
- d. Urethra stricture
- e. Infertility
- f. Sexual disorders

SCENARIO 5: SWELLING

A 65-year-old male was taken by his children to the primary health center due to swellings on his two legs since two days before admission. The swelling also occurred in his eyelids. The patient also complained of nausea and vomiting, decreased appetite, and shortness of breath a few hours back. He had a previous history of diabetes mellitus. Upon examination, the patient appeared weak with a BP of 160/90 mmHg, HR 100 bpm, RR of 32 times per minute with fast and shallow breathing. Further physical examination revealed the presence of pitting edema, ascites, and soft rhonchi on both lungs. The laboratory examination revealed an albumin level of 1.5 gr/dl, urea of 110 mg/dL, creatinine of 10.5 mg/dL, and protein urine +++ on urinalysis. The patient was advised to monitor the urine production and prepare for an Esbach examination and blood gas analysis.

2. **Learning Objectives**

- a. Explain the definition, etiology, pathophysiology, clinical manifestations, physical examination, supporting investigation, management, appropriate referral of **nephrotic syndrome, acute glomerulonephritis, chronic glomerulonephritis, diabetic nephropathy, and acute tubular necrosis**.
- b. Explain the definition, risk factor, pathophysiology, clinical manifestations, physical examination, supporting investigation, management, appropriate referral, and prognosis of **acute renal failure, chronic kidney failure, and end-stage renal failure**
- c. Explain the kidney transplantation and its humanities aspects
- d. Describe the fluid balance disorders (hypovolemia and hypervolemia)
- e. Describe the electrolyte balance disorders including, hyperkalemia, hyponatremia, hypernatremia, hypokalemia, hypocalcemia, hypermagnesemia, and hyperphosphatemia.
- f. Explain the acid-base balance disorders (metabolic acidosis and alkalosis)
- g. Explain the management of patients with e fever in a manner pharmacological .

3. **Subject**

- a. Nephrotic syndrome
- b. Acute glomerulonephritis
- c. Chronic glomerulonephritis
- d. Diabetic nephropathy
- e. Acute kidney failure
- f. Chronic kidney disease
- g. diuretic

4. **Clue**

- a. Palpebral and feet swelling
- b. tachypnea
- c. hypertension
- d. urine proteins
- e. urea creatinine

5. **Minimal Problems**

- a. Edema in kidney disease
- b. Disturbance of homeostasis in kidney disease

