

Syllabus of the Sub-Speciality

Paediatric Urology

1. Normal and pathological embryology of the urinary and genital tract

- 1.1. Development of the kidney
- 1.2. Development of the urinary tract
- 1.3. Development of the gonads and genital tract

2. Nephrology

- 2.1. Normal physiology of the urinary tract and kidney
- 2.2. Pathophysiology of pre and postnatal hydronephrosis
- 2.3. Laboratory and diagnostic tests
 - 2.3.1. Hematuria
 - 2.3.1.1 Diagnostic procedures (imaging and endoscopic procedures)
 - 2.3.2. Proteinuria
- 2.4 Acute kidney diseases and acute kidney injuries
 - 2.4.1. Glomerular (glomerulonephritis, hemolytic-uremic-syndrome, IgAN-V)
 - 2.4.2. Tubular (acute, acquired, hereditary diseases)
 - 2.4.3. Interstitial
 - 2.4.4 Infectious
- 2.5.5 Stones
- 2.5. Chronic Kidney Disease and dialysis

2.5.1. CKD international classification

2.5.2 Aetiology of chronic kidney disease

2.5.3. Symptoms and signs (CKD-hypertension and cardiovascular health, CKD-Metabolic Bone Disorders)

2.5.4 Conservative treatment

2.6. Dialysis (indication, peritoneal-haemodialysis)

2.6.1 Peritoneal dialysis

2.6.1.1 Principles

2.6.1.2 Peritoneal access

2.6.2 Hemodialysis

2.6.2.1 Principles

2.6.2.2 Vascular access

2.7 Kidney transplantation

2.7.1. Indications

2.7.2. Selection, risks and contra-indications

2.7.3. Immunology (principles)

2.7.4. Preparation and diagnostic work-up

2.7.5. Cadaveric and living donor kidney

2.7.6. Surgical technique of implantation, removal and technical complications

2.7.7. Euro-Transplant-organization rules

2.7.8. Post-transplant complications (principles)

3. Infection

3.1. Definition of UTI (asymptomatic bacteriuria, bacterial cystitis, pyelonephritis)

3.2. Diagnosis of UTI (microbiology, culture media, preparation techniques)

3.3. Specific infection: clinical features (abscess, tuberculosis, candida, eosinophilic cystitis, cystitis-cystica)

3.4. Orchitis, epididymitis

4. Principles in diagnosis of the urinary tract

4.1. History and physical examination of the child at different ages

4.2. Associated clinical signs with anomalies of the urinary tract

4.3. Urinalysis (stick, microscopic, chemical, culture)

4.4. Serum-analysis

4.5. Imaging of the urinary tract

4.5.1. Ultrasound, color Doppler: theory, possibilities and limitations

4.5.2. X-ray: protection principles (radiation safety) urography, cystography, video-urodynamics

4.5.3. Contrast media: principles, indication and contra-indications

4.5.4. Computerized tomography (principles, interpretation, possibilities, limitations)

4.5.5. Magnetic Resonance Imaging (principles, interpretation, possibilities, limitations)

4.6. Imaging of the urinary tract using radio-isotopes

4.6.1. Principles

4.6.2. Static imaging: DMSA

4.6.3. Dynamic imaging: DTPA, MAG-3

4.6.4. Interpretation of clearance and glomerular filtration rate: principles and limitations

4.6.5. Direct and indirect cystography

4.6.6. Extrarenal imaging: neuroblastoma

4.7. Prenatal diagnostic

4.7.1. Ultrasound

4.7.2. Urinalysis (electrolytes, tubular markers)

4.8. Non-invasive diagnostic of the lower urinary tract

4.8.1. Uroflowmetry (principles, methods, interpretation)

4.8.2. Electromyography (principles, methods, interpretation)

4.9. Invasive diagnostic techniques of the lower urinary tract

4.9.1. Antegrade and retrograde cystography (technique, interpretation)

4.9.2. Video-urodynamic study (technique, interpretation)

4.9.3. Cystometry (ambulatory and non-ambulatory)

5. Pre-, peri- and postoperative management of the child - Anesthesia principles

5.1. Selection, pre-operative studies

5.2. Parental information pre- and postoperative

5.3. Ambulatory surgery

5.3.1. Selection

5.3.2. Local anesthesia techniques (methods, pharmacology)

5.4. Pain management (oral, rectal, parenteral)

5.5. Postoperative fluid management

5.6. Anaesthesia (principles, premedication)

6. Anomalies of the kidney and the upper urinary tract - Diagnostic, management, therapeutic options, surgery selection, surgical techniques of:

6.1. Prenatal hydronephrosis and associated problems (pulmonary hypoplasia)

6.2. Renal agenesis

6.3. Renal hypoplasia

6.4. Renal dysplasia (multicystic dysplastic kidney, cystic dysplasia with obstruction)

6.5. Renal duplication

6.6. Polycystic infantile and adult renal disease

6.7. Horseshoe-kidney

6.8. Renal ectopia

6.9. Uretero-pelvic junction obstruction (UPJ)

6.10. Megacalycosis

6.11. Ureterocele (intra- and extravesical)

6.12. Ectopic ureter

7. Anomalies of the lower urinary tract - Diagnostic, management, therapeutic options, surgery selection, surgical techniques of:

7.1. Urachal pathology (open urachus, cysts, sinus, diverticulum)

7.2. Exstrophy – Epispadias - Complex

7.3. Bladder diverticulum

7.4. Urethritis posterior

7.5. Urethral strictures

7.6. Duplication of the urethra

7.7. Urethral diverticulum

7.8. Meatal prolapse

7.9. Urogenital sinus anomalies

7.10. Cloacal anomalies

8. Anomalies of the upper and lower urinary tract - Diagnostic, management, therapeutic options, surgery selection, surgical techniques of:

8.1. Primary mega ureter

8.2. Vesico-ureteral reflux

8.3 Prune-Belly-Syndrome

9. Anomalies of the penis - Diagnostic, management, therapeutic options, surgery selection, surgical techniques of:

9.1. Hypospadias

9.2. Phimosis (lichen sclerosus)

9.3. Epispadias

9.4. Buried penis

9.5. Penoscrotal web

9.6. Micropenis

10. Anomalies of the testis and the scrotum - Diagnostic, management, therapeutic options, surgery selection, surgical techniques of:

10.1. Maldescent of the testis (cryptorchism, ectopia, retractile)

10.2. Anorchia, polyorchia

10.3. Hydrocele, hernia

10.4. Varicocele,

10.5. Spermatocoele

11. Disorders of Sexual differentiation

11.1. Embryology and physiology of genital differentiation

11.2. Evaluation at birth: diagnostic tools and multidisciplinary approach

11.3 Psychological support and legal concerns

11.4 Therapeutic options

11.5. Surgical treatment: timing, indications, outcome, techniques.

12. Function disorders of the lower urinary tract

12.1. Normal anatomy and physiology

12.2. Classification of functional disorders

12.3. Urinary diversion techniques

12.4. Non-neuropathic function disorders

12.5. Neuropathic function disorders: conservative treatment, bladder augmentation

12.6. Principles of management in associated neurogenic disorders (digestive, orthopedic, sexual, quality of life)

13. Primary monosymptomatic nocturnal enuresis

13.1. Pathophysiology

13.2. Treatment options

14. Paediatric urology emergencies -

Diagnostic, prevention and management, therapeutic options, surgery selection, surgical techniques of:

14.1. kidney infectious problems (pyonephrosis, renal abscess)

14.2. Acute kidney injury (trauma, renal vein thrombosis)

14.3. Ureteral trauma

14.4. Adrenal haemorrhage

14.5. Renal colic (acute upper urinary tract obstruction)

14.6. Urinary retention

14.7. Testicular torsion

14.8. Torsion of the appendix testis

14.9. Incarcerated hernia

14.10. Testicular rupture

14.11. Orchitis

14.12. Epididymitis

14.13. Paraphimosis

14.14. Priapism

14.15. Penile and scrotal trauma

14.16. Bladder trauma (intra- and extraperitoneal rupture)

14.17. Urethral rupture

14.18. Trauma of the female genital tract

14.19. Infection of the female genital tract (vulvovaginitis, foreign body)

14.20. Acute hydro- and haematocoele

14.21. Idiopathic scrotal oedema

15. Urolithiasis

15.1. Aetiology

15.2. Metabolic disorders

15.3. Chemical characteristics

15.4. Diagnosis and management

15.5. Treatment options

16. Paediatric urology oncology - Diagnostic, management, therapeutic options, surgery selection, surgical techniques of:

16.1. Wilms tumour

16.2. Neuroblastoma

16.3. Rhabdomyosarcoma

16.4. Testicular tumours (Leydig cell, Yolk
Sac, Leukaemia)

16.5. Hypernephroma

16.6. Pheochromocytoma

17. Management and social aspects of the care of the child as a patient

17.1. Communication skills with the child and
its family

17.2. Knowledge of the psychosocial and
sexual development of a child

17.3. Child protection issues (sexual abuse)

17.3.1 Principles and rules for declaration to
the authorities

17.4. Guide- line and anticipation for the
transition to adult care