

Syllabus of the Sub-Speciality

Paediatric Urology

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

- 1.1. Development of the kidney and ureter
- 1.2. Development of the bladder and the urethra
- 1.3. Development of the female genital tract
- 1.4. Development of the male genital tract

2. Nephrology

- 2.1. Normal physiology of the urinary tract and kidney
- 2.2. Pathophysiology of pre and postnatal hydronephrosis
- 2.3. Haematuria
 - 2.3.1. Definition
 - 2.3.2. Analysis
 - 2.3.4. Aetiology
 - 2.3.5. Diagnostic
- 2.4. Parenchymal pathology
 - 2.4.1. Glomerular diseases (glomerulonephritis, hemolytic-uraemic-syndrome)
 - 2.4.2. Tubular diseases (acute renal insufficiency, hereditary diseases)
 - 2.4.3. Interstitial nephritis
- 2.5. Renal insufficiency and dialysis
 - 2.5.1. Aetiology of chronic renal insufficiency

2.5.2. Clinic (pyuria, anaemia, hypertension, bone metabolism; growth disorders)

2.5.3. Dialysis (indication, peritoneal-haemodialysis)

2.6 Renal transplantation

2.6.1. Indication

2.6.2. Selection, risks and contra-indications

2.6.3. Preparation and diagnostic work-up

2.6.4. Transplantation-immunology (HLA)

2.6.5. Cadaveric and living donor kidney

2.6.6. Surgical technique of explantation, implantation and postoperative technical complication

2.6.7. Working of Euro-Transplant-organization

2.6.8. Posttransplant immunosuppression technique

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 (stix, 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, 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. Special 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 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 : incomplete
- 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. Vesico-ureteral reflux
- 7.5. Urethral valves
- 7.6. Urethritis posterior
- 7.7. Urethral strictures
- 7.8. Duplication of the urethra
- 7.9. Urethral diverticulum
- 7.10. Meatal prolapse
- 7.11. Urogenital sinus anomalies
- 7.12. Cloacal anomalies

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

8.1. 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. Sexual differentiation problems

- 11.1. Embryology and physiology of genital differentiation
- 11.2. Hermaphroditism, female and male pseudohermaphroditism
- 11.3. Mixed gonadal dysgenesis

11.4. Chromosomal abnormalities

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. Management of associated problems of
neurogenic disorders (bowel, tethered cord,
pubertas praecox, latex allergy, amnesia)

13. Primary monosymptomatic nocturnal enuresis

13.1. Pathophysiology

13.2. Treatment options

**14. Paediatric urology emergencies -
Diagnostic, management, therapeutic
options, surgery selection, surgical
techniques of:**

14.1. Renal infectious problems (pyonephrosis,
renal abscess)

14.2. Renal non-infectious problems (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. Clinical, diagnostic 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. Transition to adult care