Internal Medicine II

Submitted by Marie Havlová on 28. August 2014 - 0:00

Syllabus of Internal Medicine II

The subject is composed from theoretical lectures and clinical practicals.

Practicals are run on wards of Internal Clinic.

Start of lectures and practicals is specified in time schedule.

Students may check which meeting room/ward is assigned to their class:

* faculty website – study – time schedules - click on respective study group
* on a noticeboard on the floor 4D (in front of the secretariat of Internal Clinic)

Syllabus of lectures of Internal Medicine II

Nephrology:

1. Introduction to nephrology.
   History of nephrology. Kidney anatomy, nephron, loop of Henle, blood supply.
   Kidney physiology and pathophysiology. Hormon secretion by the kidneys: renin-
   angiotensine-aldosteron system, vasodilatators and their significance, the
   kidney and vitamin D, erythropoietin. History taken in the renal patient. Physical
   examination in patients with the renal disease. Blood pressure and the kidney,
   the kidney and blood pressure. How to collect the urine for laboratory assays.
   Urinalysis and microscopy. The urine pH and its interpretation. Proteinuria:
   quantitative and qualitative classification. Erythrocyturia and hematuria:
   classification. Casts: typology and significance. Urine culture. The glomerular
   function, glomerular filtration rate, clearance methods. SNGFR – single nephron
   glomerular filtration rate, its clinical and pathophysiologic significance. The
   tubular function. The urine concentration and acidification, tubular syndromes.

*Required knowledge: renal, urether and urinary bladder anatomy and physiology; renal pathophysiology*

2. Glomerulonephritis.


Transplantation and glomerulonephritis, recurrence in the graft.

*Required knowledge: the nephron structure; acute and chronic serum sickness; structure and physiological role of immune globulins; antiidiotopic antibodies; pathogenesis of immune mediated inflammation*
3. Acute and chronic renal failure.

Required knowledge: renal, urether and urinary bladder anatomy and physiology; renal pathophysiology


Required knowledge: renal, urether and urinary bladder anatomy and physiology; renal pathophysiology

5. Fluid and electrolyte disorders.

Required knowledge the role of water, sodium, potassium, calcium, phosphorus in the organism; mechanisms of water and electrolyte balance; Starling Law


Required knowledge: renal, urethra and urinary bladder anatomy and physiology; renal pathophysiology

7. Tubulointerstitial nephropathy.

Required knowledge: renal, urethra and urinary bladder anatomy and physiology; renal pathophysiology


Required knowledge: renal, urethra and urinary bladder anatomy and physiology; renal pathophysiology

Haemodialysis, peritoneal dialysis. Renal transplant, immunosuppressive
therapy.
Required knowledge: renal, urether and urinary bladder anatomy and physiology; renal pathophysiology

**Hematology:**

10. Anemias.
Short revision of clinically relevant information on hematopoiesis and basic laboratory tests in anemia diagnosis. Clinical presentation of anemias (signs and symptoms). Classifications used in differential diagnostics of anemias in clinical practice. Clinically most important types of anemia: iron deficiency anemia, anemia of chronic disease and megaloblastic anemias. Pathophysiology, differential diagnostics of causes and modern treatment of these diseases. Basic characteristics of hemolytic and aplastic anemias and principles of their diagnostic approach and treatment.

Required knowledge: pathology and pathophysiology of haematopoiesis

11. CLL, myeloproliferative and myelodysplastic syndromes.
Definition, etiology, pathogenesis of chronic leucemias and myeloproliferative disorders. Laboratory and imaging methods, treatment.

Required knowledge: pathology and pathophysiology of haematopoiesis

Definition, ethiopathogenesis, diagnostics, clinical presentation.

Required knowledge: pathology and pathophysiology of haematopoiesis

13. Disorders of coagulation. Definition, etiology, pathogenesis and clinical presentation of bleeding disorders and trombophilic states. Laboratory and imaging methods, treatment. Required knowledge: pathology and pathophysiology of coagulation

**Rheumatology:**
   Ethiology, pathogenesis, diagnostics and therapy of systemic inflammatory
diseases. Clinical presentation and complications.
   Required knowledge: pathology and pathophysiology of connective tissues and
joints

   Basic classification of vasculitides. Primary and secondary vasculitides.
   Vasculitides of large vessels (Takayasu and Horton’s arteriitis), vasculitides of
medium size vessels (polyarteritis nodosa and Kawasaki disease) and
vasculitides of small vessels (Wegener’s granulomatosis, Churg-Strauss, ETA).
   Clinical presentation – systemic (febrility, fatigue, inflammation) and local.
   Treatment of vasculitides.
   Required knowledge: pathology and pathophysiology of vasculitides

15. Rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis –
ethiopathogenesis, clinical presentation, diagnostics and therapy.
   Required knowledge: pathology and pathophysiology of connective tissues and
joints

16. Systemic lupus erythematosus, scleroderma, dermatopolymyositis,
polymyalgia rheumatica – ethiopathogenesis, clinical presentation, diagnostics
and treatment. Required knowledge: pathology and pathophysiology of
connective tissues and joints.

17. Osteoporosis – diagnosis and treatment. Required knowledge: pathology and
pathophysiology of connective tissues and joints.

**Endocrinology:**

18. Diseases of parathyroid glands and disorders of calciophosphate metabolism.
   Calcium, its role and content in the body. Homeostasis of calcium-phosphate
metabolism. Parathormon, calcitonin and vitamin D and their role in calcium
level regulation. Hyper and hypoparathyreosis. Osteoporosis, diff dg of
hypocalcemic states.
   Required knowledge: pathology and pathophysiology of endocrine glands

19. Diseases of the thyroid gland, endemic goiter.
   Thyreopaties, ethiology. Metabolism of iodium and its role in thyreoid gland
function. Thyreoideal hormones and their role in the body. Diagnostics and treatment of thyreopaties.

*Required knowledge: pathology and pathophysiology of endocrine glands*

Adrenal glands and their hormones, role of adrenal hormones in metabolism regulation. Clinical presentation and syndromes connected to disturbances in hormonal secretion.

*Required knowledge: pathology and pathophysiology of endocrine glands*

Hormones of pituitary gland and hypothalamus, their role in metabolism. Clinical syndromes connected to disturbances in hormonal secretion, diagnostics and treatment.

*Required knowledge: pathology and pathophysiology of endocrine glands*

**Varia:**

22. Enteral and parenteral nutrition.
The most important information about clinical nutrition are given. The necessity of the special nutrition support in some diseases are explained.

*Required knowledge: pathology and pathophysiology of metabolism*

23. Practical application of nutritional evidence into clinical practice.
The most important information about clinical nutrition are given. The necessity of the special nutrition support in some diseases are explained.

*Required knowledge: pathology and pathophysiology of metabolism*


*Required knowledge: pathology and pathophysiology of diabetes*

25. Diabetic foot syndrome.
Ethiology and pathogenesis of diabetic foot syndrome, diabetic neuropatie and tissue ischemia. Influence of infection on the healing. Classification, diagnostics, treatment and prevention.

*Required knowledge: pathology and pathophysiology of diabetes*
26. Pre-operative examination and peri- and post-operative medical care in seriously ill patients (diabetes, hypertension, cardiac diseases...).
   Preparation for surgery, ability of patients for surgery.
   Required knowledge: pathology and pathophysiology

27. Functional disorders of the gastrointestinal tract. Celiakia.
   Required knowledge: pathology and pathophysiology of GIT

28. Therapy of infections in internal medicine.
   Basic terminology connected to infectious diseases. Strategy of antimicrobial therapy, basic principles and side effects of the treatment.
   Required knowledge: pharmacology of antimicrobial agents, infectology

29. Primary and secondary prevention of cardiovascular diseases.
   The principle risk factors and the complications of atherosclerosis are mentioned. The modalities that can decrease the risks and complications of atherosclerosis are underlined.
   Required knowledge: pathology and pathophysiology of circulation

30. The importance of genetic examination in internal medicine. Genetically conditioned diseases, theirs’ screening and importance of genetic examination.
   Required knowledge: basic principles of genetics.

**Lectures on Geriatrics, pharmacotherapy and differential diagnostics with respect of the patient’s age:**

31. Introduction to clinical geriatrics.
   Definition of geriatric patients, differences of clinical presentation in elderly patients, involution changing of aging. Functional examination of geriatric patient. Frailty syndrome. Rational pharmacotherapy in elderly people.
   Required knowledge: pathophysiology of aging

32. Gastrointestinal tract disorders in elderly patients.

Required knowledge: pathophysiology of aging

33. The musculoskeletal system in elderly patients.
Influence of aging on function of the motion system, most frequent joint disorders in elderly people. Differences in clinical presentation and treatment of elderly people.

Required knowledge: pathophysiology of aging

34. Psychiatric disorders in elderly patients.
Influence of aging on CNS function, changes in cognitive function, dementia and next disturbances. Differences in clinical presentation and treatment of elderly people.

Required knowledge: pathophysiology of aging

35. Coronary heart disease, cardiovascular disorders in elderly patients.

Required knowledge: pathophysiology of aging

36. Diabetes mellitus in elderly patients.

Required knowledge: pathophysiology of aging

37. Case reports from geriatrics – model presentation of elderly patients suffer from diabetes and cardiovascular disease.

Required knowledge: pathophysiology of aging


Required knowledge: pathology and pathophysiology of circulation

39. Differential diagnosis of dyspnoea – theory, differential diagnostics and case
reports with respect of the patient’s age.
Ethiology, acute dyspnoea – bronchial asthma, acute heart failure, aspiration. Chronic dyspnoea – COPD, pulmonary fibrosis, chronic heart failure. Pneumonia, tuberculosis, pneumothorax, anemias, leucemias, bleeding, dehydratation, tonsilitis acuta.

Required knowledge: pathology and pathophysiology of circulation


Required knowledge: pharmacology

41. Pharmacotherapy of Type 2 diabetes mellitus – theory, differential diagnostics and case reports with respect of the patient’s age.

Required knowledge: pharmacology

42. Antiaggregational and anticoagulant therapy, prevention and treatment of venous thromboembolism. Theory, differential diagnostics and case reports with respect of the patient’s age.

Required knowledge: pharmacology

43. Liver steatosis, it’s importance and treatment with respect of the patient’s age.

Required knowledge: pathology and pathophysiology of gastrointestinal tract

44. Anorectal dysfunction in geriatric patients. Required knowledge: pathology and pathophysiology of gastrointestinal tract
45. Arthropathies and arthritis - theory, differential diagnostics and case reports with respect of the patient's age. *Required knowledge: pathology and pathophysiology of joints*

46. Infusion therapy with respect of the patient's age. Case reports. *Required knowledge: pathology and pathophysiology of metabolism and circulation*

A lead supervisor of teaching of Internal Medicine II is:
prof. MUDr. Milan Kvapil, CSc., MBA

Responsible person: as. MUDr. Pavlína Piňhová, Ph.D., tel. 22443 4014, 4067

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