Assignment for self-assessment for students of the 6th year

1. What laboratory tests are included to the hypertension management program?

2. At a routine company physical examination, an asymptomatic 46-year-old man is found to have a BP of 150/110 mm Hg, but no other abnormalities are present. What should be done next?

1. The triad headache, palpitations, and sweating in a hypertensive patient was found to have a sensitivity of 91% and specificity of 94% for:

a) pheochromocytoma;
b) hyperaldosteronism;
c) Cushing's syndrome;
d) acromegaly.

2. There are several mechanisms of blood pressure elevation in Cushing's syndrome with the exception of:

a) increased hepatic production of angiotensinogen and cardiac output by glucocorticoids;
b) reduced production of prostaglandins via inhibition of phospholipase A;
c) increased insulin resistance;
d) oversaturation of 11beta-HSD activity with increased mineralocorticoid effect through stimulation of the mineralocorticoid receptor;
e) increased peripheral resistance.

3. Screening studies for Cushing's syndrome include: a) measuring 24-h urinary free cortisol excretion on at least 2 occasions; b) performing 1 mg dexamethasone suppression test; c) checking a midnight salivary cortisol and diurnal rhythm of cortisol secretion; d) stress excersise test.

4. A 37-year-old women was admitted to the hospital with such symptoms: rounded "moon" feaces with a plethoric appearance; truncal obesity with prominent supraclavicular and dorsal cervical fat pads; the distal extremities and fingers are usually quite slender; muscle wasting and weakness are present. The skin is thin and atrophic, with poor wound healing and easy bruising. Purple striae appear on the abdomen. Blood pressure is 165/100 mm Hg. Menstrual irregularities and hypertrichosis.

What is your primary diagnosis? Management.

5. A 40-year-old man with paroxysmal hypertension was admitted to the hospital. Tachycardia attack, tachypnoea, flushing, cold and clammy skin, severe headache, palpitation, nausea, vomiting, visual disturbances, dyspnoea, paresthesias occurred. Paroxysmal attacks are provoked by palpation of the abdomen or after emotional trauma.

What is your primary diagnosis? Management.

6. The best screening tests for primary hyperaldosteronism involve determinations of: a) plasma aldosterone concentration (normal: 1–16 ng/dL) and plasma renin activity (normal: 1–2.5 ng/mL/h); b) calculation of the plasma aldosterone/renin ratio (normal: < 25); c) plasma prostaglandins concentration.

1. The "gold standard" (the definitive test) in diagnosis of renal artery stenosis is:

a) arteriography;
b) duplex ultrasonography;
c) radionuclide imaging.

2. Renovascular hypertension should be suspected if:

a) diastolic hypertension develops abruptly in a patient < 30 or > 50;
b) new or previously stable hypertension rapidly worsens within 6 months;
c) hypertension is initially very severe, associated with worsening renal function;
d) hypertension is highly refractory to drug treatment;
f) all of the above signs are correct.

3. A class of drugs that cause vasodilation and are used to treat hypertension and heart failure:

a) ACE inhibitors;
b) glycosides;
c) potassium and sodium channel blockers (amiodarone).

4. Adverse effect of all ACE inhibitors:

a) retention of potassium;
b) retention of sodium;
c) hypokalaemia;
d) retention of catecholamine.

5. ACE inhibitors should be used with caution in patients with:
a) aortic valve stenosis or cardiac outflow obstruction;
b) congestive heart failure;
c) prevention of nephropathy in diabetes mellitus.

6. The most common cause of renal artery stenosis is:
a) atherosclerosis;
b) increased production of the hormone rennin;
c) extrinsic compression of the renal pedicle by tumours.

1. A 44-year-old woman is presenting with prolonged stabbing chest pain on the left from sternum, dizziness, paresthesia, general sweating, sleeplessness. She's sick for a year. The examination reveals emotional lability, a regular heart rate with a systolic murmur above heart apex. Blood pressure is 120/80 mm Hg; pulse is 88 beats/min, regular, respiratory rate is 16 breaths/min. Her lungs are clear. The abdomen is soft without tenderness or distention. The liver spans 10 cm in the midclavicular line with a smooth edge. There is no peripheral oedema, pulse is intact. Her weight is 84 kg, height is 176 cm. She is afebrile. On ECG: sinus rhythm, negative T-waves in V1-V4 leads which disappear (T-waves become positive) after potassium or propranolol test. Suggested diagnosis is:
a) dishormonal cardiomyopathy;
b) IHD: stable angina, FCII;
c) infective myocarditis;
d) rheumocarditis.

2. A 28-year-old man is presenting with chest pain, palpitations, and dyspnoea after adenoviral infection. Examination revealed pale skin, acrocyanosis, a regular weakened heart beats, cardiac borders expanded to the left and to the right. Blood pressure is 90/60 mm Hg; pulse is 92 beats/min, respiratory rate is 20 breaths/min. His lungs are clear. The abdomen is soft without tenderness or distention. The liver spans 10 cm in the midclavicular line with a smooth edge. There is no peripheral oedema. On ECG: decreased voltage of R-waves, PQ 0.22 sec. Suggested diagnosis is:
a) viral myocarditis;
b) infective endocarditis;
c) rheumatic myocarditis;
d) exudative pericarditis;
e) dilated cardiomyopathy.

1. 34-year-old patient with sudden onset of fatigue, and palpitation addressed to the doctor's office. On ECG: presence of frequent and regular P waves and QRS complexes. What rhythm disorder has occured and what drug will you select for treatment?

2. A 52-year-old man arrived to the emergency room with irregular tachycardia, ventricular rate of 250/min, blood pressure of 80/60 mm Hg, and prolonged QRS complexes. It is known he has the Wolff-Parkinson-White syndrome. What medicines should be used for immediate management?

3. Negative P waves were registered on ECG in the II and III standard leads, QRS complexes are not changed and go after P waves. Pacemaker is located in:
a) sinus node;
b) AV node;
c) ventricles;
d) inferior part of the atrium;
e) everything is wrong

1. A 63-year-old woman was admitted to the coronary care unit with palpitation, weakness and after short period of loss of consciousness. She indicates on impairment of state for about 4 months.

Her pulse is 52 per min, arrhythmical, no murmur sounds. On ECG: sinus and irregular rhythm, PQ interval – 0.2 sec, QRS complexes – 0.08, gradual increase R-R interval with subsequent PQRST dropout. What is the reason of such state?

a) sinoatrial block;
b) AV-block, type I;
c) block of 3 fascicles of His bundle;
d) AV-block, type II.

2. The ECG examination of the 32-year-old male shows the PR interval of conducted beats is normal but some P waves are not conducted. What type of block is it? What is the management of this disorder?

3. A type of AV block characterised by progressive lengthening of the PR interval until the P wave fails to conduct is:

a) second degree AV-block: Mobiz type II;
b) second degree AV block: Mobiz type I;
c) first degree AV block;
d) third degree block.

4. Rhythms required permanent pacing in patients with cardiac disorders include:

a) supraventricular tachycardia;
b) second-degree AV block: Mobiz type I;
c) complete heart block;
d) Wolf-Parkinson-White syndrome.

1. A 53-year-old man complains of pressing chest pain on 100 m walking that lasts about 15 min. The examination reveals a regular heart rate with a reduced intensity S_1 and normal S_2. Blood pressure is 140/90 mm Hg; pulse is 90 beats/min, regular, respiratory rate is 20 breaths/min. His lungs are clear. The abdomen is soft without tenderness or distention. On ECG: sinus rhythm, high and sharp T waves in V2–V4 leads. During the last week pain appears at night and at rest, not stopped after taking 1 tab. of nitroglycerin. What disease can you think of?

a) progressive angina;
b) stable angina, FC4;
c) myocardial infarction;
d) vasospastic angina;
e) stable angina, FC3.

2. A 38-year-old man complains of angina attacks and dyspnoea on excersises. The patient suffers from obstructive form of hypertrophic cardiomyopathy. The examination reveals a regular heart rate. Blood pressure is 145/85 mm Hg; pulse is 80 beats/min. What medicine is contraindicated in this situation?

a) bisoprolol;
b) verapamil;
c) aspirin;
d) nitroglycerin.

3. What ECG sign is typical for myocardial ischaemia?

a) ST elevation less than 1 mm;
b) ST depression less than 1 mm;
c) ST depression more than 1 mm;
d) ST elevation more than 5 mm.

4. What test should be made in inefficiency of 24 hour ECG monitoring for revealing of painless form of ischaemia?

a) pharmacological test with propranolol;
b) pacemaker setting;
c) excersise test.

5. A 58-year-old man complains of dyspnoea on excersises and mild oedema on the legs. He has never complained of chest pain, never used nitrates and other medicines. There are no pathological changes of ST segment and T wave on ECG at rest; in excersise test there is ST segment depression more than 2 mm. What should be suspected?

a) painless form of myocardial ischaemia;
b) vasospastic angina;
c) lung pathology;
d) state of absolute health.

1. What disorders is chronic constrictive pericarditis associated with?
2. What idiopathic cardiomyopathy is related to heredity?
   a) dilated;
   b) hypertrophic;
   c) restrictive;
   d) arrhythmogenic right ventricular dysplasia.
3. What idiopathic cardiomyopathy is accompanied by disturbances of diastolic cardiac function?
   a) dilated;
   b) hypertrophic;
   c) restrictive;
   d) arrhythmogenic right ventricular dysplasia;
   e) hypertrophic, restrictive.
4. What idiopathic cardiomyopathy is accompanied by disturbances of systolic cardiac function?
   a) dilated;
   b) hypertrophic;
   c) restrictive;
   d) arrhythmogenic right ventricular dysplasia.
5. What cause of metabolic cardiomyopathy is the most frequent?
   a) uraemia;
   b) podagra;
   c) electrolytes deficit;
   d) endocrine pathology.
6. A 58-year-old man complains of dyspnoea, weakness, intermission of pulse, oedema on the legs. The examination reveals enlargement of cardiac size in percussion. Blood pressure is 130/80 mm Hg; pulse is 90 beats/min, irregular, respiratory rate is 20 breaths/min. On ECG: tachysystolic variant of atrial fibrilation. On cardiac ultrasound: enlargement of cardiac chambers, EF is 36%. What disease does this patient have?
   a) dilated cardiomyopathy;
   b) hypertrophic cardiomyopathy;
   c) myocarditis;
   d) myocardiodystrophy.

1. A 39-year-old woman complains of dyspnoea on exertion, chest pain, palpitation. She had previous rheumatic fever twenty years ago. She was treated with acute pharyngitis two weeks ago. Physical examination reveals a low-pitched, rough, and rasping pansystolic murmur, loudest at the base of the heart in the second right intercostal space, weak and regular pulse, HR is 88 beats/min, BP is 150/90 mm Hg. What diagnosis do you suspect? Prescribe the treatment.
2. Initial dose for enalapril in CHFis:
   a) 2.5 mg once a day;
   b) 15 mg bid;
   c) 5 mg bid;
   d) 10 mg bid.

1. A 40-year-old woman presented with palpitation and dyspnoea which increases progressively during the past 3 years. There was chorea and arteritis in childhood. Physical examination: acrocyanosis, PS is 104, irregular, pulse deficit is 22 per minute, a severe systolic murmur and moderate presystolic are heard above heart apex with radiation, the I sound is reduced. On ECG: left ventricular hypertrophy, atrial fibrillation. What is the clinical diagnosis?
2. A 56-year-old man complains of fatigue, dyspnoea on exertion, and palpitations. He has had a murmur since childhood, frequent respiratory infections. Examination reveals intensified right-ventricle beat, a lift at the left sternal border, fixed splitting of S_2, systolic ejection murmur in the pulmonary area (II to IV). Chest X-ray shows right ventricular enlargement and prominent

pulmonary arteries. ECG demonstrates atrial fibrillation with a right bundle-branch block. What is the most likely diagnosis?

3. What medicines must be used to decrease pulmonary hypertension?
   a) diuretics and nitrates;
   b) cardiac glycosides;
   c) anticoagulants;
   d) antiarrhythmic drugs;
   e) antibiotics.
4. At what stages of mitral stenosis surgical treatment isn't indicated?
   a) at the I stage;
   b) at the I–II stages;
   c) at the IV–V stages;
   d) at the V stage;
   e) at the I and V stage.
5. At what stages of mitral regurgitation surgical treatment isn't indicated?
   a) at recurrent systemic embolisms despite of anticoagulant treatment;
   b) at the I–II and V stages;
   c) at moderate heart failure with atrial fibrillation, decreased EF or dilated cardiac chambers;
   d) at significant CHF (FC III–IV);
   e) at the I and V stage.
6. What medicines are used for asymptomatic patients with aortic stenosis?
   a) diuretics;
   b) cardiac glycosides;
   c) anticoagulants;
   d) vasodilators;
   e) antibiotics (for prevention of infective endocarditis).

7. A 33-year-old male was seen in the clinic with one year history of worsening exertional dyspnoea and orthopnoea. He had no recollection of any previous symptoms of rheumatic fever. No other past medical illness of note apart from mild asthma.

On clinical examination, he was slim built with blood pressure of 120/80 and a regular pulse. No evidence of peripheral oedema was present. Jugular venous pressure was not raised. Cardiovascular examination revealed a loud first heart sound, opening snap and mid diastolic murmur with presystolic accentuation. Electrocardiograph demonstrated sinus rhythm with right bundle branch block along with evidence of left atrial enlargement.

Transthoracic and transoesophageal echocardiography confirmed severe rheumatic mitral stenosis with thickening and fusion of the commissures, mitral valve area of 0.7–0.9 cm^2, mild mitral regurgitation and left atrial dilatation. There was also marked pulmonary hypertension with a systolic pulmonary artery pressure estimated to be 70 mm Hg.

The clinical and biochemical markers: RBC – $4.0*10^{12}$/l; Hb – 146 g/l; ESR – 4 mm/h; WBC – $6*10^{-9}$/l; eos. – 2%, stab neutr. – 4%, segmented neutrophils – 59%, lymphocytes – 11%, monocytes – 5%. Total serum protein – 65 g/l, serum urea – 6.7 mmol/l, creatinine – 90 μmol/l, bilirubin – 19 μmol/l, AST – 10 units, fasting plasma glucose – 4.8 mmol/l, rheumatoid factor – 1:32, uric acid – 0.25 mmol/l.

Urinalysis: RBC – 1 to 2 per high-power field, WBC – 3 to 2 per high-power field, specific gravity – 1028. Urinary protein excretion is 0.15 g/day.

Suggest management for such patient.

1. Presumptive diagnosis: haemorrhagic vasculitis with skin affection, articular, renal and abdominal syndromes; complicated by gastrointestinal bleeding.

Additional investigations: ECG, bleeding time, clotting time, thrombocytes' count, FGDS, consultations of neurologist and ophthalmologist. Antineutrophil cytoplasmic antibody (ANCA) levels, biopsy of involved organ or tissue, such as skin, sinuses, lung, nerve, and kidney. The biopsy elucidates the pattern of blood vessel inflammation.

Corticosteroid therapy is initiated with prednisone in a dose of 0.5 to 1.5 mg/kg per day.

2. The differential diagnoses are systemic vasculitis with multisystem involvement; infections

(HIV, hepatitis B or C); endocarditis; rheumatoid arthritis; and malignancy. Blood tests, immunological tests, skin ulcer biopsy and nasal biopsy, chest radiograph and computed tomography.

3. A diagnosis of Wegener's granulomatosis, a form of necrotising vasculitis, was made on the basis of clinical presentation, the presence of classical antineutrophil cytoplasmic antibody, which is 99% specific for the diagnosis of primary systemic vasculitis (about 90% of patients with active Wegener's granulomatosis are positive for this antigen). It is preferable to have tissue biopsies. Diagnosis is confirmed with a tissue biopsy at a site where disease is active. Nasopharyngeal biopsies are preferable because they are relatively non-invasive compared with a lung or kidney biopsy, which are at times the only options. In admission we can suspect SLE, so additional investigations should be immunological.

Treatment depends on the extent of involvement. In cases of widespread systemic involvement, and especially if the lungs or kidneys are involved, steroids and immunosuppressive therapy are needed. Cyclophosphamide is typically used to induce remission, and other immunosuppressive agents are considered once the disease is under control. If a diagnosis is in doubt, treatment should not be delayed because Wegener's granulomatosis has a high mortality if left untreated. With the use of cytotoxic drugs 8 year survival is reported to be 80%. So remission can be induced with pulse-therapy (bolus i.v. methylprednisolone (10 mg/kg) initially 3 days and cyclophosphamide (15 mg/kg) on the 2^{nd} day), and subsequently with oral high-dosage prednisolone (1 mg/kg daily) and continuous oral cyclophosphamide (2 mg/kg daily). Doses of cyclophosphamide should be reduced in those with renal impairment. The dose of oral prednisolone is rapidly reduced once remission has occurred. Cyclophosphamide is usually continued for 6–12 months in total. Antihypertensive medicines, antiagregants.

1. Pain and swelling of the right knee has developed in 24-year-old man, following enterocolitis epidemic in building team. Arthritis is accompanied by the considerable limitation of the motion range, cutting pain in the eyes, pain in mouth mucous membrane during eating hot and strong food. Patient has severe synovitis of the right knee. Laboratory tests: an elevated erythrocyte sedimentation rate (ESR). Consultation of the ophtalmologist – acute conjunctivitis. Questions: A. What is the provisional diagnosis? B. What is an additional plan of examination? C. What pathological forms should you make differentiation between?

2. A 22-year-old man complains of low back pain and stiffness that is worse on arising and improves with exercise. On examination, he is found to have limited mobility of the sacroiliac joints and lumbar spine. X-ray examination shows bilateral sacroiliitis. A serum test for histocompatibility antigen HLA-B27 is positive. What diagnosis do you suspect? Prescribe the main groups of drugs.

1. A 54-year-old woman complains of night pain in knees, starting pain, limitation of the motion range. General state became worse a week after cooling. She has been ill through 5 years. Polyarthralgias started when the menstruation stopped. She didn't take any treatment.

Objectively: General state is satisfactory. BP – 130/75 mm Hg, pulse – 78 beats per minute. Examination of cardiovascular and respiratory systems is not remarkable. Abdomen is soft, liver isn't palpated. Knees are deformed, skin and local temperature is normal, the movement of knees is limited by 15°. Blood analysis: L – $6.4 \cdot 10^9$/l, ESR – 11 mm/hour, CRP – 0.8 mg/l. X-ray examination of joint – unequal loss of joint space, osteophytes. What is the provisional diagnosis?
What non-pharmacologic treatment modalities should be recommended?
What medicine is preferable to relieve pain in case of history of hypertension and/or diabetes?

A 75-year-old woman presents to the emergency room with left wrist pain after a fall at home. She tripped and fell while preparing dinner. She heard a "snap" and felt immediate pain. Her medical history is remarkable for hypertension that is well controlled with diuretics and ACE-inhibitor, menopause at age 52. She has no history of smoking. Her weight is 84 kg, and her height is 172cm. Her examination is remarkable for normal vital signs; a swollen, deformed left distal forearm and wrist, with limited mobility because of pain; and good radial pulses and capillary refill in the left fingernail beds. An x-ray confirms a fracture of the left radial head. The doctor put a cast on the patient's hand. The blood test was normal except for low levels of Vitamin D. The patient

was also asked to get a DEXA scan, which revealed a T score of -2.9. What risk factor for fracture is this woman likely to have? What are the causes of this condition? What can her physician offer her to prevent future fractures?

1. A 34-year-old man was admitted to the emergency room with the recent onset of fever (38–39 °C), dyspnoea, palpitation. A high-pitched, diastolic murmur, heard best in the third intercostal space along the left sternal border. Infective endocarditis is suspected. What sign would be found on echocardiography?

2. Doctor didn't prescribe antipyretic for patient with flu proceeding from protecting influence of high temterature. What mechanism of protective influence in fever do you know?

a) direct negative influence of fever on infecting agent;
b) activation of erythrogenesis;
c) activation of lysozyme production;
d) activation of interferon production;
e) activation of antibody formation.

3. A 19 year old woman was admitted to the hospital with history of high grade swinging temperature up to 38.8 °C. She had had a sore throat, which lasted for a few days, accompanied by fever, rigors, and myalgia. Her general practitioner prescribed amoxicillin, and she subsequently developed a macular rash on her wrists, back, and legs associated with the fever spikes. The symptoms were persistent over three weeks, prompting referral to the department. She hadn't travelled to anywhere recently. She had no history of recreational drug use or sexual contact and she was not taking any regular medication.

On initial examination she was tachycardic (100 beats/min) and febrile (37.5 °C) with a BP of 108/68 mm Hg. Her oral cavity and cardiovascular, respiratory, abdominal, and nervous system examinations were normal. There was no lymphadenopathy. Her right knee was tender but she had no swollen joints.

Laboratory findings: RBC – $3.0*10^{12}$/l; Hb – 116 g/l; ESR – 28 mm/h; WBC – $14*10^{9}$/l; eos. – 2%, stab – 6%, neutrophils – 79%, lymphocytes – 15%, monocytes – 5%. Total protein – 73 g/l, albumin 46 g/l, urea – 6.7 mmol/l, creatinine – 90 μmol/l, bilirubin – 19 μmol/l, AlT = 64 IU/l, γ glutamyltransferase – 227 (normally 12–43) IU/l, alkaline phosphatase 127 (30–115) IU/l, CRP = 326 mg/l, normal antistreptolysin O titres, negative blood film for malarial parasites, negative results for mononucleosis spot test, IgM for Epstein-Barr virus, cytomegalovirus polymerase chain reaction, hepatitis B surface antigen, and serology for hepatitis C, chlamydia, autoantibody screen negative (RF, ANA, double stranded DNA, extractable nuclear antigen, antineutrophil cytoplasmic antibodies).

Chest radiography and abdominal ultrasonography showed no abnormality. Blood and throat was sent for culture. Throat swab culture, fungal blood cultures, serial bacterial blood cultures, and malarial films gave negative results. Transthoracic echocardiograms appeared normal. Three weeks after admission she continued to have spiking temperatures of up to 40 °C. She also described a simultaneous erythematous rash, which was not raised and was most pronounced on the dorsal aspect of her legs. She thought that the rash was similar to her previous rash but not as prominent. She later developed a 1 cm firm, mobile lymph node in the right anterior triangle of her neck. Fine needle aspiration gave negative results and she had a biopsy. The lymph node biopsy specimen was initially reported to be consistent with reactive inflammation.

What differential diagnoses would you consider? What further investigations should be carried out?

1. Diagnostic criteria for autoimmune atrophic gastritis are all mentioned, except:

a) achlorhydria induces G-cell (gastrin producing) hyperplasia, which leads to hypergastrinemia;
b) pernicious anaemia may develop in longstanding cases;
c) anti-parietal cell and anti-intrinsic factor antibodies;
d) low prevalence of Helicobacter pylori;
e) high prevalence of Helicobacter pylori.

2. A 58-year-old man complaints were as follows: inability to swallow any solids, due to this, the patient was on a liquid diet, reflux after eating food, weight loss. He reported a 2-month history

of progressively worsening dysphagia with solids only and weight loss of 10 kg over a period of 3 months. He denied cough, regurgitation, hoarseness, palpitations, and dyspnoea. Past medical history was significant for hypertension for 5 years which had been treated with valsartan and hydrochlorothiazide. He denied any history of cardiovascular problems or arrhythmias. He quit smoking 7 years before and denied drinking alcohol. There was no other significant medical, family or social history. Physical examination revealed: pale skin and mucus with yellow hue, weight – 51 kg, height – 172 cm. He is afebrile. BP is 120/75 mm Hg; pulse is 100 beats/min, regular, respiratory rate is 18 breaths/min.

The thyroid gland is normal to palpation. Normal chest conformity. Peripheral lymph nodes are not enlarged. There is vesicular breathing at auscultation of lungs. Tactile fremitus is normal. The heart apex is nondisplaced. There is no gallop or murmur. The abdomen is soft without tenderness or distention. The liver spans 12 cm in the midclavicular line with a smooth edge. There is no oedema on the legs. Distal pulses are equal.

Blood testing: RBC – $2.8*10^{12}$/l; Hb – 86 g/l; ESR – 10 mm/h; WBC – $8*10^{9}$/l; eos. – 2%, stab – 6%, neutrophils – 69%, lymphocytes – 15%, monocytes – 5%. Total protein – 63 g/l, albumin 36 g/l, urea – 8.7 mmol/l, creatinine – 100 μmol/l, bilirubin – 19 μmol/l, fasting glucose – 3.8 mmol/l, cholesterol – 5 mmol/l, triglycerides – 1.8 mmol/l. Urine chemistry: normal.

Chest X-ray: no infiltrates. Oesophagography revealed an irregular stenosing lesion accompanied by low elevation with a major axis of 40 mm in the lower thoracic oesophagus.

What investigations have diagnostic meaning? What pathological process is more probable? What does blood test indicate on?

3. Broncho-oesophageal syndrome in GERD is caused by:
   a) regurgitation of stomach contents to the airways;
   b) overweight;
   c) dysphagia;
   d) oesophagus spasm.

1. A 29 year old man was treated with the first line medicines for 10 days (according to Maastricht II consensus) due to ulcer disease. Now he continues treatment with omeprazol but 2 weeks ago persistant and rising pain appeared. He underwent appendectomy at the age of 22, which was uncomplicated. His father has a duodenum ulcer. On physical examination BP is 110/70 mm Hg, heart rate is 104 beats/min and respiratory rate is 18 breaths/min. He is afebrile. The chest is clear to auscultation and percussion. The heart is regular without extra sounds or murmurs. The abdomen is painful in epigastria, isn't tender when touched. The liver and spleen are not palpable. The liver spans 11 cm in the midclavicular line with a smooth edge.

Blood testing: RBC – $3.9*10^{12}$/l; Hb – 136 g/l; ESR – 8 mm/h; thrombocytes – $250*10^{9}$/l; WBC – $9*10^{9}$/l; eos. – 2%, neutrophils – 69%, lymphocytes – 32%, monocytes – 5%. Total protein – 63 g/l, albumins – 60%, globulins – 40% (α-globulins 10%, β-globulins 11%, γ-globulins 17%), urea – 6.7 mmol/l, creatinine – 70 μmol/l, bilirubin – 19 μmol/l, fasting glucose – 4.8 mmol/l, cholesterol – 4 mmol/l, AST – 37 U/L, ALT – 46 U/L, γ-GT – 57 U/L, sodium – 125 meq/L, prothrombin time – 80%, alkaline phosphatase – 46 U/L.

Chest radiographic findings, ECG are normal.

What complication caused impairment in patient's condition?

2. The main complaints in ulcerative colitis are: a) abdominal pain, frequent, small-volume fluid stools or constipation; b) heartburn, nausea; c) eructation; d) elevation of BP.

3. Signs of Crohn's disease are: a) fasting night pain in epigastria, relieving-pain vomiting; b) abdominal pain mostly in the morning, fluid stools with mucus; c) colicy abdominal pain that relieve after defecation and passage of flatus; d) pain is often associated with diarrhoea which is watery and does not contain blood or

4. mucus, weight loss.

Signs of chronic cholecystitis complicated by cholangitis are: a) epigastric pain, vomiting; b) heartburn, hypersalivation; c) anorexia; d) diarrhoea; e) rigors, right-hypochondrium pain

1. A 32 year old man is noted to have fatigue at the end of a busy working week, yellow sclera. He underwent appendectomy at the age of 22, which was uncomplicated. Risk factors for chronic hepatitis are absent, except that he insufflated cocaine a few occasions during his college years.

On physical examination the patient looks generally well, except jaundice. Blood pressure is 132/92 mm Hg, heart rate is 84 beats/min, respiratory rate is 14 breaths/min. He is afebrile. The neck is supple without lymphadenopathy or thyromegaly. The chest is clear to auscultation and percussion with no gynecomastia or spider telangiectasias. The heart is regular without extra sounds or murmurs. The abdomen is soft without tenderness or distention. The left lobe of liver is not palpable nor is there splenomegaly. The liver spans 8 cm in the midclavicular line with a smooth edge. There is no abdominal collateral circulation, umbilical hernia, or bruit. There are no signs of ascites, other stigmata of chronic liver disease. The extremities show no clubbing, cyanosis, oedema, nor is there palmar erythema. Neurologic examination is within normal limits without asterixis. The skin has no stigmata of chronic liver disease.

Blood testing: RBC – $3.9*10^{12}$/l; Hb – 136 g/l; ESR – 8 mm/h; thrombocytes – $250*10^{9}$/l; WBC – $6*10^{9}$/l; eos. – 2%, neutrophils – 69%, lymphocytes – 32%, monocytes – 5%. Total protein – 63 g/l, albumins – 60%, globulins – 40% (α-globulins 10%, β-globulins 11%, γ-globulins 19%), urea – 6.7 mmol/l, creatinine – 70 μmol/l, bilirubin – 39 μmol/l, fasting glucose – 4.8 mmol/l, cholesterol – 6 mmol/l, AST – 87 U/L, ALT – 166U/L, γ-GT – 87 U/L, sodium – 105 meq/L, prothrombin time – 42.8%, alkaline phosphatase – 96 U/L, fibrinogen – 2 g/l.

Hepatitis serology: anti-HAV total – positive, anti-HAV IgM – negative, anti-HBc – positive, HBsAg – negative, anti-HBs – positive, anti-HCV – positive, HCV RNA – positive. Chest radiographic findings, ECG are normal. Abdominal ultrasound revealed a mildly echogenic liver with normal contour, portal vein diameter is 10 mm, spleen vein diameter is 5 mm. No gallstones are seen.

What is the most likely clinical diagnosis? What treatment does this patient need?

2. Mild jaundice, best seen by examining the sclerae in natural light, is usually detectable when serum bilirubin reaches: a) 25 μmol/l; b) 35 μmol/l; c) 60 μmol/l; d) 100 μmol/l.

3. Jaundice in pancreatic cancer differs from jaundice in gallstones by mentioned signs except: a) development without previous pain attack; b) fast increasing of bilirubin; c) positive Courvoisier-Terrier syndrome; d) persistant and intensive jaundice; e) appears in elder patients.

1. Splenomegaly and ascitis are observed in: a) primary biliary cirrhosis; b) portal liver cirrhosis; c) Wilson's disease; d) portal hypertensive syndrome of different origin.

2. A 47 year old female patient was referred with a complaint of pruritus which developed 2 months before.

Medical history: she has ulcerative colitis (complaints of the bloody defecation with mucus for 6–7 times a day) and she uses mesalazine tablet with 3 g/day; the bloody diarrhoea with mucus had been regressed. A pruritus was begun about 2 months ago which become refractory and she was referred to the clinic. She did not have any connective tissue disease. She also did not have a story of drug use that will affect the hepatobiliary system except mesalazine. She is a non-smoker, non-alcoholic.

On the physical examination: she is fully conscious and oriented. Patient is of average build. Pulse is 72/minute regular, blood pressure is 130/90 mmHg, her skin and sclera's are in a mild icteric appearance, and the liver is exceeding the costa border about 2 cm. There was not any pathological finding on examination of the other systems.

Laboratory examinations: RBC – $3.5*10^{12}$/l; Hb – 116 g/l; ESR – 28 mm/h; thrombocytes – $250*10^{9}$/l; WBC – $6*10^{9}$/l; eos. – 2%, neutrophils – 69%, lymphocytes – 32%, monocytes – 5%. Total protein – 63 g/l, albumins – 60%, globulins – 40% (α-globulins 10%, β-globulins 11%, γ-globulins 19%), urea – 6.7 mmol/l, creatinine – 70 μmol/l, bilirubin – 39 μmol/l, fasting glucose – 4.8 mmol/l, cholesterol – 6 mmol/l, AST – 67 U/L (normal: 0–41 U/l), ALT – 106 U/L (normal: 0–40 U/L), γ-GT – 87 U/L, sodium – 105 meq/L, prothrombin time – 42.8%, alkaline phosphatase – 396 U/L (normal: 30–91 U/L), GGT–124 U/L (normal: 0–61 U/L), fibrinogen – 2 g/l. CRP – 2.08 mg/dL. Viral hepatitis panel is negative.

Immunological tests: anti-nuclear antibody (ANA), antismooth muscle antibody (ASMA), antiliver and antikidney microsome antibody (LKM), p-ANCA are negative. Antimitochondrial

antibodies (AMA) are positive with a value >1/160 and anti-M2 antibody (AMA-M2) is also positive. Thyroid function tests are normal.

Abdominal ultrasonography: hepatomegaly. Magnetic resonance cholangiopancreatography: gallbladder, common bile duct and intrahepatic bile ducts were evaluated as normal.

Total colonoscopy: ulcerative colitis was detected in the descending colon, sigmoid colon and mild to moderate with rectal involvement.

Biopsy was taken from the sigmoid colon and rectum and crypts: cryptic micro abscesses and crypt distortion are observed. Liver biopsy: diffuse inflammation and the portal areas were infiltrated by the lymphocytes and histiocytes.

Upper gastrointestinal endoscopy revealed normal oesophageal mucosa and lumen, no oesophageal varices.

What is your clinical diagnosis? Management?

3. Bad prognostic signs in liver cirrhosis are:

a) increasing plasma bilirubin;
b) hypoalbuminemia or an albumin concentration < 30 g/l;
c) marked hyponatraemia (< 120 mmol/l not due to diuretic therapy);
d) prolonged prothrombin time;
e) all of the above signs are correct.

1. Diagnostic criteria for COPD are:

a) FEV1<90% predicted, FEV1/FVC<80%; b) FEV1<80% predicted, FEV1/FVC<70%;
c) FEV1<70% predicted, FEV1/FVC<60%; d) FEV1<60% predicted, FEV1/FVC<50%;

2. A 21-years-old patient works at the pharmacy, complains of dry cough, recurrent attacks of dyspnoea for 2 months, on weekends symptoms decrease, t – 37.0 °C. Current attack of dyspnoea was stopped by salbutamol. BP is 126/80 mm Hg, heart rate is 92 beats/minute and regular, respiratory rate is 18 breaths/minute. Examination reveals mildly oedematous nasal mucosa with no discharge. Cardiac examination shows regular rate and rhythm without murmur. On pulmonary auscultation prolonged expiration and bilateral wheezing are heard over all parts of the lungs. X-ray shows no abnormalities. What is the presumptive diagnosis?

a) bronchial asthma;
b) COPD;
c) medicamentous disease;
d) spontaneous pneumothorax

1. The most frequent causes of non-infectious pleuritis are:

a) diffuse connective tissue diseases;
b) chest trauma;
c) pulmonary infarction in pulmonary embolism;
d) malignancy;
e) acute pancreatitis, myocardial infarction;
f) all written above.

2. Specific gravity of transudate, protein content and leukocytes count in 1 mkl of transudate in laboratory investigation are:

a) <1005 g/l, <15g/l, <500;
b) <1010 g/l, <20g/l, <750;
c) <1015 g/l, <30g/l, <1000;
d) <1020 g/l, <35g/l, <1500;
e) <1025 g/l, <40g/l, <1500.

3. Patient F., 60 years old, with clinical symptoms of pleuritis was performed pleural punction. Obtained haemorrhagic fluid examination revealed a specific gravity of more than 1.030, protein – 3.5 g/dL; fluid LDH to serum LDH ratio 0.75; atypical cells.

What kind of fluid was obtained? What are the most frequent causes of exudative pleuritis?

1. A patient with low-grade fever and weight loss has poor excursion on the right side of the chest with decreased fremitus, flatness to percussion, and decreased breath sounds all on the right. The trachea is deviated to the left. The most likely diagnosis is:

a) pneumothorax;
b) pleural effusion;
c) consolidated pneumonia;
d) atelectasis.

1. The Somogyi effect is:
a) episode of nighttime hypoglycemia resulting in high blood sugar levels;
b) period of high blood sugar in the morning (7–9 a.m.);
c) night hyperglycemia related to deficit of prolong insulin;
d) resistance to insulin.

2. A 26-year-old man presents with headache, weakness, facial and crus oedema. His current medication includes insulin 34 units/daily. He has a history of diabetes for the past 6 years.

The examination reveals oedematous face, legs, pale skin, heart rate is regular, 100/min. Blood pressure is 180/100 mm Hg; respiratory rate is 20 breaths/min. His lungs are clear. The abdomen is soft without tenderness or distention. The liver spans 10 cm in the midclavicular line with a smooth edge. His weight is 58 kg, height is 176 cm. He is afebrile.

Blood testing: RBC – $3.4*10^{12}$/l; Hb – 104 g/l; ESR – 10 mm/h; WBC – $7.2*10^{9}$/l. Total protein – 63 g/l, urea – 6.2 mmol/l, creatinine – 98 μmol/l, bilirubin – 19 μmol/l, glucose profile – 12–7.8–10 mmol/l, cholesterol – 5 mmol/l, triglycerides – 1.5 mmol/l. Haemoglobin A_1c – 7.9%. Urine chemistry: protein 2.5 g/l.

Chest X-ray: no infiltrates.

What complication has been developed in this patient?
a) diabetic nephropathy;
b) kidney amyloidosis;
c) chronic pyelonephritis;
d) nephrotic syndrome;
e) glomerulonephritis.

What are the main directions in treatment?

1. A 60-year-old man presented with dry mouth, paresthesia of the crus, dyspnoea on exertion that is accompanied by chest pain. Pain with radiation to neck or chest tightness lasts about 15 min. A rest or taking a pill under the tongue makes the symptoms go away. The patient suffered from anterior wall MI 10 months ago. His current medications include ramipril 5 mg twice a day, aspirin 100 mg, metformin 500 mg bid. His social history is positive for occasional alcohol and negative for smoking. He has a history of hypertension and diabetes for the past 4 years.

The examination reveals a regular heart rate with a reduced intensity S_1 and normal S_2. Blood pressure is 160/90 mm Hg; pulse is 82 beats/min, regular, respiratory rate is 20 breaths/min. His lungs are clear. The abdomen is soft without tenderness or distention. The liver spans 10 cm in the midclavicular line with a smooth edge. There is no peripheral oedema and the pulses are intact. His weight is 88 kg, height is 176 cm.

Blood testing: RBC – $4.4*10^{12}$/l; Hb – 134 g/l; ESR – 10 mm/h; WBC – $7.2*10^{9}$/l; eos. – 1%, stab neutr. – 4%, segmented neutrophils – 59%, lymphocytes – 15%, monocytes – 5%. Total protein – 63 g/l, urea – 6.2 mmol/l, creatinine – 98 μmol/l, bilirubin – 19 μmol/l, fasting glucose – 7.8 mmol/l, cholesterol – 7 mmol/l, triglycerides – 2.5 mmol/l. Haemoglobin A_1c – 7.9%. Potassum 5.0 μmol/l, GFR – 80 ml/min. Urine chemistry: protein 1.5 g/l. Chest X-ray: no infiltrates, mild cardiomegaly.

What can be done to slow diabetes complications?

1. Metabolic syndrome is diagnosed if a person has central obesity and any 2 of the following are mentioned except (according to the new IDF definition):
a) raised fasting plasma glucose ≥ 100 mg/dL (5.6 mmol/L) or previously diagnosed type 2 diabetes;
b) serum triglycerides 150 mg/dl (1.7 mmol/L) or above;
c) HDL cholesterol 40 mg/dl (1.03 mmol/L) or lower in men and 50 mg/dl (1.29 mmol/L) or lower in women;
d) systolic BP ≥ 130 or diastolic BP ≥ 85 mm Hg or treatment of previously diagnosed hypertension; e) raised creatinine level ≥ 115.6 μmol/L.

2. Central obesity defined as:

a) a waist circumference over 94 cm in men and over 80 cm in women;

b) a waist circumference over 84 cm in men and over 70 cm in women;

c) a waist circumference over 104 cm in men and over 100 cm in women.

3. A 56-year-old man had ST-elevated MI. He has no history of diabetes. The examination reveals that heart rate is regular, 90/min. Blood pressure is 150/90 mm Hg; respiratory rate is 16 breaths/min. His lungs are clear. The abdomen is soft without tenderness or distention. His weight is 58 kg, height is 176 cm.

Blood testing: RBC – $3.4*10^{12}$/l; Hb – 134 g/l; ESR – 10 mm/h; WBC – $7.2*10^{9}$/l. Total protein – 63 g/l, urea – 6.2 mmol/l, creatinine – 98 μmol/l, bilirubin – 19 μmol/l, fasting glucose – 4.8 mmol/l, cholesterol – 5 mmol/l, triglycerides – 1.5 mmol/l, uric acid – 233 μmol/l. Chest X-ray: no infiltrates.

Determine the grade of obesity. What risk factor should be removed in secondary prevention?
a) hyperglycemia; b) hyperuricemia; c) hypercholesterolemia; d) obesity; e) hypertension

1. A 70-year-old female with a history of hypertension and coronary artery disease, presented with complaints of weight loss, palpitations, headaches and heat intolerance. Physical examination revealed 4 cm thyroid nodule in the left lobe on palpation. Her blood pressure was 140/85 mmHg, and resting pulse was 102/min with sinus rhythm. Her TSH suppressed 0.22 uIU/mL (reference range: 0.40–4.00 uIU/mL) while free thyroxine 2.4 ng/dL (0.8–1.9 ng/dL) and free triiodothyronine 4.4 pg/mL (1.5–4.1 pg/mL) elevated. The radioiodine uptake scan showed the abnormal focus of hot uptake in the left lobe and suppression in the remaining thyroid tissue.

Questions: What is the scan suggestive for?

What test should be performed to rule out any remote possibility of thyroid cancer?

If the cytology report is suggestive of thyroid carcinoma, what treatment should be given to the patient?

Cytologist described finding as a solitary tumor of 3.0 cm in diameter, follicular variant of papillary thyroid carcinoma. No other cancerous tissue found in the remaining thyroid gland. Due to the small size of the tumor no ablative radioiodine therapy performed. What treatment should be administered after surgery?

1. A female college student complains of dysuria and pollakiuria, nausea, vomiting, fever. Urinalysis reveals 28 to 30 WBCs per high-power field and numerous gram-negative bacteria. What diagnosis do you suspect?

2. Nephritic syndrome is characterized by the mentioned signs except:

a) proteinuria less than 3.5 g/24-hours;

b) erythrocyturia (more than 2000/ml in Nechiporenko test);

c) leukocyturia (more than 4000/ml in Nechiporenko test);

d) erythrocyturia (more than 3000/ml in Nechiporenko test);

e) casts.

3. A 24-year-old farmer has had acute tonsillitis. In 2 weeks he noticed facial oedema on waking, elevated temperature of 37.7 °C, weakness. BP is 130/75mm. Urinalysis reveals: specific gravity – 1026, protein – 1.66 g/l, 28 to 30 RBCs per high-power field and numerous casts. What diagnosis do you suspect?

a) acute glomerulonephritis, nephrotic syndrome;

b) acute glomerulonephritis, isolated urinary syndrome;

c) chronic glomerulonephritis, exacerbation;

d) acute pyelonephritis;

e) chronic pyelonephritis, exacerbation.

4. A 44-year-old man is referred to you for evaluation and treatment of recurrent renal colic and passage of renal stones. What kind of examination will you choose?

5. A 30-year-old man complains of headache, high BP, oedema on different parts of the body. He has been sick for 7 years. BP is elevating for the past 4 years. He is noted on heamaturia periodically. Physical examination reveals tachycardia 96/min, BP is 190/130mm Hg. Heart sounds are weak, rhythmical, accentuated S_2 above aorta. Blood testing: RBC – $3.4*10^{12}$/l; Hb – 114 g/l;

ESR – 10 mm/h; WBC – $7.2*10^9$/l; eos. – 1%, stab neutr. – 4%, segmented neutrophils – 69%, lymphocytes – 19%, monocytes – 5%. Total protein – 63 g/l, urea – 6.2 mmol/l, creatinine – 198 μmol/l, bilirubin – 19 μmol/l, fasting glucose – 4.8 mmol/l, cholesterol – 7 mmol/l, triglycerides – 2.5 mmol/l. GFR 80 ml/min. Urinalysis reveals: specific gravity is 1015, protein – 2.6 g/l, 12 to 14 RBCs per high-power field, 4–6 WBCs per high-power field and numerous casts. Urine chemistry: protein – 3.5 g/l. What is the most likely diagnosis?

a) chronic glomerulonephritis;
b) kidney amyloidosis;
c) kidney stones;
d) chronic pyelonephritis.

6. Effectiveness of diuretics in chronic heart failure can be decreased in therapy by:

a) diclofenac;
b) ibuprofen;
c) prednisolon;
d) everything is right.

7. What diuretic has ototoxic action?

a) verospiron;
b) hypothiazide;
c) furosemide;
d) triamteren.

8. A 40-year-old man was admitted at the nephrological department with diagnosis – chronic glomerulonephritis, nephrotic syndrome, hypertensive stage. Objectively: oedema on different parts of the body, pleural effusion and ascites. What pathogenic treatment should be prescribed in the first place?

a) antibiotics;
b) antiaggregants;
c) prednisolon;
d) antisensitizer;
e) diuretics.

1. A 49-year-old man has been ill with chronic osteomyelitis for 10 years after crus fracture. Nephrotic syndrome appeared 3 years ago. He died of uraemia. During dissection: dense and white kidneys, with scars in the cortical layer, greasy glitter on cross-section. What pathology had developed?

a) chronic glomerulonephritis;
b) primary amyloidosis;
c) secondary amyloidosis;
d) chronic pyelonephritis.

2. A 46-year-old woman was admitted to the nephrological department with oedema on crus, face, high BP (160/100 mm Hg). Urine chemistry: protein 3.8 g/l. What is the most appropriate pathogenic treatment for this patient?

a) antibiotics;
b) corticosteroids;
c) diuretics;
d) Ca-channel blockers;
e) NSAID.

1. A 50-year-old man with end-stage of CRF due to chronic glomerulonephritis is maintained on long-term haemodialysis three times each week. He has came to the dialysis unit with a 4.5 kg weight gain since his last dialysis 2 days ago. He is moderately short of breath and his blood pressure is 195/125 mm Hg. What is the most appropriate management of his hypertension at this point?

2. Pulmonary haemorrhage has appeared in patient with progressive nephritis and CRF. What is the most likely diagnosis?

a) SLE with renal involvement;
b) bronchiectasis;

c) pulmonary oedema;
d) pulmonary infarction;
e) Goodpasture's syndrome.

3. Indications to haemodialysis in CRF:
a) glomerular filtration < 5 ml/min.;
b) stable decrease of daily urine less than 700 ml;
c) hypercreatinaemia up to 1100–1300 μmol;
d) symptoms of pericarditis, encephalopathy, neuropathy;
e) all mentioned above.

4. The earliest symptom of CRF is:
a) high blood presure;
b) hypostenuria;
c) oedema;
d) polyuria;
e) anaemia.

1. How would you diagnose aplastic anemia?
a. Blood smear
b. Complete blood count
c. Spleen biopsy
d. Bone marrow biopsy

2. Medical examination of a 43 y.o. man revealed objectively pailness of skin and mucous membranes, smoothness of lingual papillas, transverse striation of nails, fissures in the mouth corners, tachycardia. Hemoglobin content amounts 90 g/l; there are anisocytosis, poikilocytosis. The most probable causative agent of this condition is deficiency of the following mi-croelement:
a. Iron
b. Copper
c. Zinc
d. Magnesium

3. A 50 year old patient has been admitted to the clinics with atrophic gastritis. Blood count: erythrocytes - 3, 8 • 10^{12}/l, Hb - 68 g/l, c.i. - 1, macroanisocytosis, poikilocytosis. There is megaloblastic type of haemopoesis. A number of leukocytes, reticulocytes and thrombocytes is lreduced. Which pathology is suspected?
a. B12-deficiency anemia
b. Irondeficiency anemia
c. Hemolytic anemia
d. Post-hemorrhagic anemia

1. A man, aged 68, complains of tiredness, sweating, enlargement of cervical, submaxillary and axillary lymph nodes. Blood test: WBC- 35 * 10^9/L, lymphocytes - 60%, Botkin and Gumprecht bodies, level of haemoglobin and quantity of thrombocytes is normal. Myelogram showed 40% of lymphocytes. What is the most probable diagnosis?
a. Chronic myelolocytic leukemia
b. Chronic lymphocytic leukemia
c. Hodgkin lymphoma
d. Acute leukemia

2. A 27 y.o. patient has been having for almost a year fatigue, hyperhidrosis, heaviness in the left hypochondrium, especially after meals. Objectively: spleen and liver enlargement. In blood: erythrocytes - 3,2 • 10^{12}/l, Hb - 100 g/l, leukocutes 100 • 10^9/l, basophils - 7%, eosinophils - 5%, myelocytes - 15%, juveniles - 16%, stab neutrophils - 10%, segmentonuclear leukocytes - 45%, lymphocytes - 2%, monocytes - 0%, reticulocytes - 0,3%, thrombocytes - 400 • 10^9/l, ESR- 25 mm/h. What is the most probable diagnosis?
a. Chronic myelolocytic leukemia
b. Chronic lymphocytic leukemia
c. Acute leukemia
d. Erythremia

3. A 54 year old woman complains of increasing fatigue and easy bruising of 3 weeks' duration. Physical findings included pale, scattered ecchymoses and petechiae and mild hepatosplenomegaly. Blood count: RBC- 2, 5 • 10^{12}/l; Hb – 73 g/l; Ht - 20%; PLT- 23 • 10^{9}/l; and WBC-162 • 10^{9}/l with 82% blasts, that contained Auric rods; peroxidase stain was positive. What is the most probable diagnosis?

a. Acute leukemia
b. Chronic leukemia
c. Thrombocytopenia
d. Hemolytic anemia

1. A 52 y.o. woman complains of weakness, painful itching after washing and bathing, sensation of heaviness in the head. On examination: hyperemia of skin of face, neck, extremities. AP- 180/100 mm Hg. Speeln is 4 cm below the rib arch edge. What is the most probable diagnosis?

a. Polycythemia vera
b. Essential hypertension
c. Dermatomyositis
d. Allergic dermatitis
e. Systemic sclerodermia

1. A 43-year-old male patient undergoing treatment for peptic ulcer complains of weakness, dizziness, coffee-ground vomiting, melena. After administration of haemostatics the patient's condition has not improved, fresh blood has shown up in the vomit, skin bruises of different sizes have appeared. In blood: thrombocytes - 50*10^{9}/l, Lee-White clotting time - 35 minutes, APTT - 80 seconds. In this case it is most rational to administer the following preparation:

a. Fresh frozen plasma
b. Heparin
c. Fibrinogen
d. Vikasol

2. An 18 y.o. girl complains of weakness, dizziness, loss of appetite, menorrhagia. There are many-coloured petechiae on the skin of the upper extremities. Blood test: Hb - 105 g/l; RBC- 3,2*10^{12}/L; C.I.- 0,95; PLT.- 20*10^{9}/L. The sedimentation time according to Lee White is 5'; hemorrhagia duration according to Duke is 8', "pinch and tourniquet" test is positive. What is the most probable diagnosis?

a. Idiopathic thrombocytopenic purpura
b. Hemophilia
c. Hemorrhagic diathesis
d. Iron deficiency anemia

3. A 18 y.o. boy suddenly felt pain in his right knee, it became edematic. The day before he took part in a cross-country race. Family anamnesis has no data about hemophilia and bleeding sickness. Objectively: body temperature is 37,5°C. The knee is painful, hot to the touch, edematic with local tissue tension over it. Blood count: Hb - 123 g/L, leukocytes - 5,6*10^{9}/L, thrombocytes - 354*10^{9}/L, prothrombin time - 12 seconds (normally 10-15 seconds), partly activated thromboplastin time - 72 seconds (normally 35-45 seconds). Hemorrhage time is normal, VIII:C factor is 5% of norm. What is the most probable diagnosis?

a. Hemophilia A
b. Hemophilia B
c. Schoenlein-Henoch disease
d. Vitamin K deficiency

A 44-year-old woman has complications on skin haemorrhages which appear spontaneously, menorrhagia, general weakness, dizziness. She has suffered from these diseases since childhood.

On examination, she was normotensive (BP 120/90). She has pale skin, haemorrhages on the anterior surface of the trunk, and internal surface of the extremities. Lymph nodes of the neck are enlarged. Her lungs are clear. Cardiac examination shows regular rate and rhythm without murmur. The abdomen is soft without tenderness or distention. The liver spans 9 cm in the midclavicular line

with a smooth edge. Spleen is palpable. Kidneys are not palpable. Pasternatsky's sign is positive in both sides. Blood testing: RBC – 1.9×10^{-12}/l; Hb – 86 g/l; ESR – 16 mm/h; WBC – $8*10^{-9}$/l; eos. – 2%, neutrophils – 69%, lymphocytes – 15%, monocytes – 5%, platelets 20,000/μL of large size, with otherwise normal morphology. Total protein – 73 g/l, urea – 6.7 mmol/l, creatinine – 80 μmol/l, bilirubin – 11.8 μmol/l, fasting glucose – 5.0 mmol/L. Urinalysis: RBC – 1–3, WBC – 1–2, specific gravity – 1012, protein 0.03 g/L. Chest radiographic findings, ECG are normal. Ultrasound shows splenomegaly.

A 33 year old woman presented to the clinic because she had had an intermittent fever, dry cough, a 4kg weight loss for the past 4 months. Her past medical history and physical exam is unremarkable and her vitals are within normal range. Lab studies had shown AST of 106 U/L, and alkaline phosphatase of 205 U/L. A chest X-ray reveals hilar adenopathy but is otherwise unremarkable. What diseases should be differentiated