

**INFECTIOUS DISEASES TEST TASKS
FOR PREPARATION TO THE STATE
LICENSED EXAMINATION
"KROK-2. MEDICINE"
(booklet 2018)**

***Methodical recommendations
for the domestic
and foreign students of V–VI years
of higher medical education***

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

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**ТЕСТОВІ ЗАВДАННЯ
З ІНФЕКЦІЙНИХ ХВОРОБ
ДЛЯ ПІДГОТОВКИ ДО ДЕРЖАВНОГО
ЛЦЕНЗІЙНОГО ІСПИТУ "КРОК-2.
ЗАГАЛЬНА ЛІКАРСЬКА ПІДГОТОВКА"
(буклет 2018 р.)**

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V–VI курсів медичних ВНЗ*

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Тестові завдання з інфекційних хвороб для підготовки до державного ліцензійного іспиту "Крок-2. Загальна лікарська підготовка" (буклет 2018 р.) : метод. вказ. для студентів V–VI курсів медичних ВНЗ / упоряд. В. М. Козько, А. В. Бондаренко, Д. В. Кацапов та ін. – Харків : ХНМУ, 2019. – 16 с.

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Task № 1	Explanation of the task	References
<p>A 34-year-old man on the 3rd day of ceftriaxone treatment for acute otitis (daily dosage – 2 grams) developed diarrhoea occurring 5–6 times per day. Faeces are without mucus or blood admixtures. Temperature is 36.6 °C. Gregersen reaction (occult blood in faeces) is negative. Stool culture detected no pathogenic germs. What is the most likely cause of diarrhoea in this case?</p> <ol style="list-style-type: none"> 1. <i>Antibiotic-associated diarrhoea</i> 2. <i>Bacterial overgrowth syndrome</i> 3. <i>Crohn's disease (regional enteritis)</i> 4. <i>Ulcerative colitis</i> 5. <i>Intestinal dysbiosis</i> 	<p>Antibiotic associated diarrhoea occurs in about 5–30% of patients either early during antibiotic therapy or up to two months after the end of the treatment. Clindamycin, ampicillin, and cephalosporins were the first antibiotics associated with antibiotic-associated diarrhoea caused by <i>Clostridium difficile</i>. The second- and third-generation cephalosporins, particularly cefotaxime, ceftriaxone, cefuroxime, and ceftazidime, are frequently responsible for this condition</p>	<p>Harrison's Principles of Internal Medicine / Dennis L. Kasper et al. – 19th edition. – New York: McGraw Hill Education, 2015. – P. 858</p>

Task № 2	Explanation of the task	References
<p>A 28-year-old woman complains of nausea, stomachache, pain in her tongue, and liquid faeces. Three days ago, she ate poorly salted pike caviar. Objectively her skin is pale; the tongue looks "lacquered" (bald tongue). Pulse is 100/min., with muffled heart sounds and systolic murmur over the cardiac apex. Blood pressure is 95/50 mm Hg. The liver is enlarged by 3 sm. Haemogram shows anaemia, eosinophils – 18 %, oval helminth eggs were detected in faeces. Make the provisional diagnosis.</p> <ol style="list-style-type: none"> 1. <i>Diphyllobothriasis</i> 2. <i>Taeniasis</i> 3. <i>Ascariasis</i> 4. <i>Trichinosis</i> 5. <i>Taeniarinchosis</i> 	<p>Diphyllobothriasis is a long-lasting infection. Most cases are asymptomatic. Manifestations may include abdominal discomfort, diarrhoea, vomiting, and weight loss. Vitamin B12 deficiency with pernicious anaemia may occur ("lacquered" bald tongue). Massive infections may result in intestinal obstruction. Migration of proglottids can cause cholecystitis or cholangitis</p>	<p>Harrison's Principles of Internal Medicine / Dennis L. Kasper et al. – 19th edition. – New York: McGraw Hill Education, 2015. – P. 1434</p>

Task № 3	Explanation of the task	References
<p>A group of 5 had been resting in a forest. They were drinking alcohol and eating canned mushrooms and cured fish. The next day two of them were hospitalized with disturbed vision, swallowing and respiration; the third one presented with acute general weakness and dry mouth. The remaining two were healthy. A tick was detected on the skin of one of the healthy group members. What is the most likely diagnosis?</p> <ol style="list-style-type: none"> 1. <i>Botulism</i> 2. <i>Alcohol poisoning</i> 3. <i>Tick-borne encephalitis</i> 4. <i>Mushroom poisoning</i> 5. <i>Lyme borreliosis</i> 	<p>Signs and symptoms of food borne botulism typically begin between 12 and 36 hours after the toxin consumption, typically neurological – disturbed vision, swallowing and respiration; the third one presented with acute general weakness and dry mouth. Epidemiological evidence is consumption of canned food and group character of the disease.</p>	<p>Harrison's Principles of Internal Medicine / Dennis L. Kasper et al. – 19th edition. – New York: McGraw Hill Education, 2015. – P. 988</p>

Task № 4	Explanation of the task	References
<p>The doctor has an appointment with a patient who 2 days ago developed severe chest pain on the left, general weakness, high temperature, and headache. Objectively along the 4th and 5th intercostal nerves on the left, the skin is hyperaemic and there are tight clusters of small vesicles filled with clear serous content. What is the most likely diagnosis?</p> <ol style="list-style-type: none"> 1. <i>Herpes zoster</i> 2. <i>Herpes simplex</i> 3. <i>Streptococcal impetigo</i> 4. <i>Dermatitis herpetiformis</i> (<i>Duhring's disease</i>) 5. <i>Pemphigus</i> 	<p>Herpes zoster is a viral disease characterized by a painful vesicular rash with blistering a localized area. Two to four days before the rash occurs there may be tingling or local pain in the area accompanied with fever and intoxication. The rash usually heals within two to four weeks</p>	<p>Harrison's Principles of Internal Medicine / Dennis L. Kasper et al. – 19th edition. – New York: McGraw Hill Education, 2015. – P. 1184</p>

Task № 5	Explanation of the task	References
<p>A 65-year-old woman was diagnosed with the following: chronic rheumatic heart disease, I degree of rheumatic activity; combined mitral heart disease with prevalence of III degree stenosis; heart failure IIA with retained left ventricular ejection fraction, functional class III (NYHA – New York Heart Association Functional Classification). What tactics of vaccination against respiratory infections should be chosen to provide secondary prevention of exacerbations and to avoid heart failure decompensation in this patient?</p> <ol style="list-style-type: none"> 1. <i>Scheduled yearly vaccination against influenza and pneumococci</i> 2. <i>Vaccination should be combined with antibiotic administration</i> 3. <i>Any vaccination is contraindicated due to elderly age of the patient</i> 4. <i>Any vaccination is contraindicated due to mitral valve disease</i> 5. <i>Vaccination is contraindicated due to severe heart failure</i> 	<p>For seasonal influenza vaccination WHO recommends, in addition to pregnant women, risk groups to be considered: children aged 6-59 months, elderly persons ≥ 65 years of age, individuals with specific chronic medical conditions, and health-care workers.</p> <p>In addition to seasonal influenza vaccine, people 65 years and older should also get pneumococcal vaccines, which protect against pneumococcal disease. CDC recommended them for all adults over 65 years old and for adults younger than 65 years who have certain chronic health conditions: chronic heart disease (excluding hypertension), chronic lung disease, chronic liver disease, alcoholism, diabetes mellitus, cigarette smoking</p>	<ol style="list-style-type: none"> 1. Summary of WHO Position Papers – Recommendations for Routine Immunization (updated: August 2018) from: http://www.who.int/immunization/policy/immunization_routine_table1.pdf 2. Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2018 from: https://www.cdc.gov/vaccines/schedule/s/hcp/imz/adult.html

Task № 6	Explanation of the task	References
<p>A 6-month-old infant is not vaccinated. The physician recommends a DPT (diphtheria, pertussis, tetanus) vaccination but the mother is absolutely against this procedure. Choose the most substantial argument in favour of vaccination:</p> <p>A. <i>Risk of lethal consequences</i> B. <i>Epidemic risk for the others</i> C. <i>High quality of vaccines</i> D. <i>Personal professional experience</i> E. –</p>	<p>Correct answer: Risk of lethal consequences Explanation. Diphtheria in unvaccinated persons causes death in 5 to 10 % of cases, mostly due to complications (laryngeal croup and myocarditis). In 2013, the Global Burden of Disease Study estimated mortality due to pertussis in the first year of life to be approximately 400 per million live births, or approximately 56 000 deaths. Tetanus mortality rates were still high in a number of countries in 2015 (more than 1,000 deaths per 100,000 population) were observed in Somalia, South Sudan, Afghanistan, and Kenya due to lack of vaccines. So vaccination with DTP is strongly recommended to reduce risk to a child</p>	<p>1. Immunization, Vaccines and Biologicals. Diphtheria. Retrieved November 1, 2018 from http://www.who.int/immunization/diseases/diphtheria/en/ 2. Cohen Jonathan. Infectious Diseases/ Jonathan Cohen, William Powderly, Steven Opal. – 3rd edition. – 2010. – P. 1666 – 1669 3. Kasper Dennis L. Harrison's infectious diseases / Dennis L. Kasper, Anthony S Fauci. – 12th edition. – New York : McGraw-Hill Education, 2017. – P. 418-422</p>

Task № 7	Explanation of the task	References
<p>During winter epidemics of influenza caused predominantly by virus A/California/04/2009 (H1N1), on the 2nd day after the disease onset a 30-year-old hospitalized man presented with high fever, dry cough, myalgia, headache, and general weakness. What should be prescribed as etiotropic treatment in this case?</p> <p>A. <i>Neuraminidase inhibitors (Oseltamivir).</i> B. <i>Interferon inducers</i> C. <i>Antibiotics</i> D. <i>Immunoglobulin</i> E. <i>Acyclovir</i></p>	<p>Correct answer: Neuraminidase inhibitors (Oseltamivir). Explanation. According to WHO guidelines and the European Centre for Disease Prevention and Control guidelines, 2017, Neuraminidase inhibitors (Oseltamivir) are medicines of choice to treat pandemic and seasonal strains of influenza.</p>	<p>1. Standard guidelines for the clinical management of severe influenza virus infections Initial Guideline Development Group (GDG) Meeting WHO HQ, Geneva, 14–16 November 2017. Retrieved November 1, 2018 from https://www.who.int/influenza/resources/documents/influenza-a-meeting-conclusion-27042018.pdf?ua=1 2. Cohen J. Infectious Diseases / Jonathan Cohen, William Powderly, Steven Opal. – 3rd edition. – 2010. – P. 1467 – 1469</p>

Task № 8	Explanation of the task	References
<p>A 23-year-old man complains of facial oedema, headache, dizziness, low urinary output, urine discoloration (dark red). These complaints arose after the patient had had a case of acute tonsillitis. On examination there are facial oedema, the skin is pale, temperature is 37.4 °C; heart rate is 86/min., blood pressure is 170/110 mm Hg. Heart sounds are muffled, the II heart sound is accentuated over the aorta. What etiological factor is the most likely in this case?</p> <p>A. <i>Beta-hemolytic streptococcus</i> B. <i>Staphylococcus aureus</i> C. <i>Streptococcus pyogenes</i> D. <i>Staphylococcus saprophyticus</i> E. <i>Streptococcus viridans</i></p>	<p>Correct answer: Beta-hemolytic streptococcus</p> <p>Explanation. Group A Beta-hemolytic <i>Streptococcus</i> causes suppurative infections and is associated with postinfectious syndromes such as acute rheumatic fever and poststreptococcal glomerulonephritis.</p>	<p>1. Harrison's Manual of Medicine / Harrison, Tinsley Randolph, and Eugene Braunwald. – 16th ed. – New York: McGraw-Hill Medical Pub. Division, 2005. – P. 814</p>

Task № 9	Explanation of the task	References
<p>A 1-year-old child with a case of URTI suddenly developed noisy respirations with difficult inspiration, intercostal retractions, and barking cough on the 2nd night after the disease onset. What is the most likely diagnosis?</p> <p>A. <i>Stenosing laryngotracheobronchitis</i> B. <i>Acute bronchitis</i> C. <i>Bronchial asthma</i> D. <i>Acute pulmonary inflammation</i> E. <i>Acute bronchiolitis</i></p>	<p>Correct answer: Stenosing laryngotracheobronchitis.</p> <p>Explanation. Parainfluenza infection in children is associated with an acute febrile illness in up to 80 % of cases. Initial symptoms include coryza, sore throat, hoarseness and dry cough. In croup, a brassy or barking cough may progress to stridor and occasionally to airway obstruction. The anteroposterior radiograph of the neck shows glottic and subglottic narrowing ('steeple sign') which differentiates croup from epiglottitis. In cases of bronchiolitis and pneumonia, progressive cough is accompanied by wheezing, tachypnea and hypoxemia. Chest X-ray examination may reveal air trapping and interstitial infiltrates. In older children and adults, HPIV infections tend to be milder and present as URTI</p>	<p>Infectious Diseases / Jonathan Cohen, William Powderly, Steven Opa. – 13rd edition. – 2010. – P. 1606–1607</p>

Task № 10	Explanation of the task	References
<p>A 32-year-old pregnant woman at the term of 5–6 weeks was vaccinated against influenza along with her whole family. At that time she was not aware of her pregnancy. The pregnancy is wanted. The woman needs an advice from the family doctor regarding the maintenance of her pregnancy, namely whether there is a risk of fetal malformations because of received vaccination. What advice should the doctor give in this case?</p> <p>A. <i>Vaccination against influenza is safe during pregnancy</i> B. <i>An infectious diseases specialist must be consulted</i> C. <i>Immediate ultrasound of the lesser pelvis is necessary</i> D. <i>Therapeutic abortion is recommended</i> E. <i>Test for antibodies against influenza virus is necessary</i></p>	<p>Correct answer: Vaccination against influenza is safe during pregnancy Explanation. Multiple studies have shown that women who have influenza vaccination during pregnancy have not had a higher risk for spontaneous abortion (miscarriage) but pregnant women are risk group of severe course in case of pandemic influenza A/California/04/2009 (H1N1)</p>	<p>1. Summary of WHO Position Papers – Recommendations for Routine Immunization Retrieved November 1, 2018 from http://www.who.int/immunization/policy/Immunization_routine_table1.pdf?ua=1 2. Infectious Diseases / Jonathan Cohen, William Powderly, Steven Opal. – 3rd edition. – 2010. – P. 1594</p>

Task № 11	Explanation of the task	References
<p>Among first-year schoolchildren there was a case of measles registered. A 7-year-old boy from the same group was not vaccinated against measles due to refusal of his parent. His clinical history has no cases of measles in the past and is not contraindicatory to immunobiological agents. Choose the most rational tactics of measles prevention in this schoolboy:</p> <p>A. <i>Measles-Mumps-Rubella vaccine</i> B. <i>Antiviral agents</i> C. <i>Isolation for 20 days</i> D. <i>Antibiotics</i> E. <i>Immunomodulators</i></p>	<p>Correct answer: Measles-Mumps-Rubella vaccine. Explanation. WHO recommends that people get MMR vaccine to protect against measles, mumps, and rubella. Children should get two doses of MMR vaccine, starting with the first dose at 12 to 15 months of age, and the second dose at 4 through 6 years of age. Teens and adults also should be up to date on their MMR vaccination</p>	<p>1. Table 3: Recommendations for Interrupted or Delayed Routine Immunization – Summary of WHO Position Papers. Retrieved November 1, 2018 from https://www.who.int/immunization/policy/Immunization_routine_table3.pdf?ua=1 2. Infectious Diseases / Jonathan Cohen, William Powderly, Steven Opal. – 3rd edition. – 2010. – P. 51–52</p>

Task № 12	Explanation of the task	References
<p>A 26-year-old man is undergoing a regular check-up. One year ago he had a case of tonsillar diphtheria complicated with myocarditis. Presently his condition is satisfactory, no signs of cardiovascular failure; ECG shows first-degree atrioventricular block. What vaccine was administered to this man according to his age?</p> <p>A. <i>Adsorbed diphtheria tetanus vaccine (modified)</i> B. <i>Oral polio vaccine (OPV)</i> C. <i>Acellular DPT vaccine</i> D. <i>BCG vaccine</i> E. <i>Tetanus anatoxin</i></p>	<p>Correct answer: Adsorbed diphtheria tetanus vaccine (modified) Explanation. Adsorbed modified diphtheria tetanus vaccine is used for routine booster immunization against tetanus and diphtheria in persons of 18 month, 6 and 16 y.o. and older every 10 years subsequently.</p>	<p>1. Immunization, Vaccines and Biologicals. Diphtheria. Retrieved November 1, 2018 from http://www.who.int/immunization/diseases/diphtheria/en/ 2. Harrison's Principles of Internal Medicine / D. L. Kasper et al. – 19th Ed. – McGraw-Hill, 2015 [pdf 120 MB]. – P. 785–793, 977–981</p>

Task № 13	Explanation of the task	References
<p>A 69-year-old woman was diagnosed with the following: ischemic heart disease; stable exertional angina pectoris, FC III; heart failure IIA with retained left ventricular ejection fraction, functional class III (NYHA). What vaccine should be chosen for influenza prevention and to avoid destabilization of the patient's condition?</p> <p>A. <i>Type of influenza vaccine is not important</i> B. <i>Recombinant influenza vaccine (RIV)</i> C. <i>Inactivated influenza vaccine (IIV)</i> D. <i>Vaccination is contraindicated due to severe heart failure</i> E. <i>Vaccination is contraindicated due to elderly age of the patient</i></p>	<p>Correct answer: Type of influenza vaccine is not important Explanation. Flu vaccination is especially important for people with heart disease or who have had a stroke because they are at high risk for complications from flu. Flu vaccines are often updated each season to keep up with changing viruses, and immunity wanes over a year so annual vaccination is needed to ensure the best possible protection against influenza. Both inactivated and recombinant influenza vaccine are used. The live attenuated influenza vaccine (LAIV) or the nasal spray vaccine, is recommended as an option for use in non-pregnant individuals, 2 through 49 years of age. There is a precaution against the use of nasal spray flu vaccine (LAIV) in people with certain underlying medical conditions, including heart disease</p>	<p>1. Flu and Heart Disease & Stroke // https://www.cdc.gov/flu/heartdisease/index.htm 2. Harrison's Principles of Internal Medicine / D. L. Kasper et al. – 19th Ed. – McGraw-Hill, 2015 [pdf 120 MB]. – P. 785–793, 1200–1215</p>

Task № 14	Explanation of the task	References
<p>A 45-year-old woman has been suffering from rheumatoid arthritis for 10 years and takes methotrexate twice a week. What statement regarding vaccination against pneumococci (23-valent vaccine) would conform to the recommendations for the management of rheumatoid arthritis issued by the European League Against Rheumatism in 2010?</p> <p>A. <i>Vaccination is recommended</i> B. <i>Vaccination is contraindicated to the patients who take methotrexate</i> C. <i>Vaccination necessitates increase in the dosage of the long-term medicines</i> D. <i>Vaccination is contraindicated in cases when inflammatory process is active</i> E. <i>Vaccination is not recommended</i></p>	<p>Correct answer: Vaccination is recommended.</p> <p>Explanation. Patients with AIIRD are at increased risk of dying from pulmonary infections compared with the general population, with pneumococci being considered as one of the main causative pathogens. 23-valent polysaccharide pneumococcal vaccination (23-PPV) should be strongly considered for patients with AIIRD (grade of evidence Ib–III; strength of recommendation B–C; Delphi vote 8.19).</p> <p>According to recommendations for the management of rheumatoid arthritis issued by the European League Against Rheumatism in 2010 vaccination in patients with autoimmune inflammatory rheumatic diseases (AIIRD) should ideally be administered during stable disease (no grade of evidence possible; strength of recommendation D; Delphi vote 8.88), but no studies have been performed comparing efficacy and harms between patients with AIIRD with stable and unstable disease. Moreover, almost all vaccination studies in patients with AIIRD addressed patients with quiescent disease.</p>	<p>1. S van Assen, N Agmon-Levin, O Elkayam, R Cervera, M F Doran, M Dougados, P Emery, P Geborek, J P A Ioannidis, D R W Jayne, C G M Kallenberg, U Müller-Ladner, Y Shoenfeld, L Stojanovich, G Valesini, N M Wulffraat, M Bijl EULAR recommendations for vaccination in adult patients with autoimmune inflammatory rheumatic diseases // <i>Ann Rheum Dis</i> 2011; 70: 414–422 doi:10.1136/ard.2010.137216. Published Online First: 3 December 2010 https://ard.bmj.com/content/70/3/414</p> <p>2. Harrison's Principles of Internal Medicine / D. L. Kasper et al. – 19th Ed. – McGraw-Hill, 2015 [pdf 120 MB]. – P. 785–793</p>

Task № 15	Explanation of the task	References
<p>A 26-year-old man complains of chills, rhinitis, dry cough, and fever up to 38 °C. Examination shows him to be in a moderately severe condition; there are small pale pink non-merging spots on the skin of his back, abdomen, and extremities. Palpation reveals enlarged occipital and axillary lymph nodes. No information about vaccination history could be obtained. What is the likely aetiology of this disease?</p> <p>A. <i>Rubella virus</i> B. <i>Mumps virus</i> C. <i>Epstein-Barr virus</i> D. <i>Neisseria meningitidis</i> E. <i>Streptococcus</i></p>	<p>Correct answer: Rubella virus.</p> <p>Explanation. An acute febrile illness (fever up to 38 °C, chills) associated with upper respiratory tract affection (rhinitis, dry cough), rash and polylymphadenopathy (palpation reveals enlarged occipital and axillary lymph nodes) in person who has not been immunized (no information about vaccination history could be obtained) is suggestive of rubella. Moreover, the rash described (small pale pink non-merging spots on the skin of the back, abdomen, and extremities) is typical for rubella and enlargement of occipital lymph nodes is a pathognomonic sign of this disease. Rubella, also known as German measles, is caused by the rubella virus, a member of the <i>Togaviridae</i>, which is a single-stranded RNA virus</p>	<p>1. Harrison's Principles of Internal Medicine / D. L. Kasper et al. – 19th Ed. – McGraw-Hill, 2015 [pdf 120 MB]. – P. 1299.</p> <p>2. Infectious Diseases / J. Cohen et al. – 3rd Ed. – Mosby, 2010 [pdf 182 MB]. – P. 102</p>

Task № 16	Explanation of the task	References
<p>A 5-year-old child that contacts with viral hepatitis in the kindergarten presents with increased body temperature up to 38 °C, weakness, low appetite, single case of vomiting, dull pain in the subcostal area on the right. The child is provisionally diagnosed with viral hepatitis. What examination would be the most informative for diagnosis confirmation?</p> <p>A. <i>ALT activity in blood</i> B. <i>Thymol turbidity test</i> C. <i>Blood analysis for stercobilin</i> D. <i>Blood test for bilirubin</i> E. <i>Urine analysis for bile pigments</i></p>	<p>Correct answer: ALT activity in blood. Explanation. To confirm presence of acute hepatitis, which was suspected according to epidemiological (contact with viral hepatitis in the kindergarten) and clinical (increased body temperature up to 38 °C, weakness, low appetite, single case of vomiting, dull pain in the subcostal area on the right) data, in preicteric period transaminase (ALT) level, which reflects cytolytic syndrome, should be checked. The transaminase levels in acute hepatitis may reach 5–100 times normal. Infection with HAV can be diagnosed by the presence of anti-HAV IgM with very high sensitivity and specificity</p>	<p>1. Harrison's Principles of Internal Medicine / D. L. Kasper et al. – 19th Ed. – McGraw-Hill, 2015 [pdf 120 MB]. – P. 2004–2023. 2. Infectious Diseases / J. Cohen et al. – 3rd Ed. – Mosby, 2010 [pdf 182 MB]. – P. 408–413</p>

Task № 17	Example for solution of task	References
<p>A 60-year-old man presents with subcompensated viral liver cirrhosis (HCV Child-Pugh class B. What tactics should I chosen regarding the vaccination again influenza in this case?</p> <p>A. <i>Scheduled yearly vaccination</i> B. <i>Contraindicated due to disease progress stage, as shown by Child-Pugh class</i> C. <i>In case of influenza outbreak</i> D. <i>Combined with antiviral drugs</i> E. <i>Contraindicated due to elderly age of patient</i></p>	<p>Correct answer: Scheduled yearly vaccination Explaining. It is well known that old patient which is presents with subcompensated viral liver cirrhosis (HCV Child-Pugh class B) are remain in risk group for mortality outcomes due to complications of influenza. In these connection there is good way for precaution of mortality – is it scheduled yearly vaccination</p>	<p>Harrison's principles of internal medicine. Part 8 infectious diseases. Immunization principles and vaccine use. – 19th Edition. – P. 785</p>

Task № 18	Example for solution of task	References
<p>A healthy child 1 year and 5 month of age is being vaccinated against hepatitis B. The child did not receive the first dose the vaccine previously, while in the maternity hospital. The doctor makes an individual vaccination schedule for this child and planning the administration of the next dose the vaccine. What is the minimum interval between doses of vaccine in this case?</p> <p>A. <i>1 month</i> B. <i>3 months</i> C. <i>6 months</i> D. <i>12 months</i> E. <i>2 months</i></p>	<p>Correct answer: 1 month Explaining. The minimum interval between doses of vaccine in this case must be according to national protocol of routine childhood immune prophylaxis</p>	<p>Harrison's principles of internal medicine. Part 8 infectious diseases. Immunization principles and vaccine use. – 19th Edition. – P. 785</p>

Task № 19	Example for solution of task	References
<p>A 26-year-old woman has been undergoing treatment for community-acquired pneumonia for 10 days. It is known that her husband had been treated for drug addiction. Sequential intravenous administration of Amoksiklav (Amoxicillin+Clavunate) + Levofloxacin combination and vancomycin in the prescribed dosage was ineffective. Within the last two days the patient's dyspnea and intoxication acutely exacerbated, bilateral pulmonary infiltrates are observed. What is the most likely cause of the medication ineffectiveness?</p> <p>A. <i>HIV infection and pneumocystic pneumonia</i> B. <i>Idiopathic fibrosing alveolitis</i> C. <i>Cancer metastases in the pulmonary tissues</i> D. <i>Infection with polyresistant bacterial strains</i> E. <i>Tuberculosis mycobacterium infection with development of tuberculosis</i></p>	<p>Correct answer: HIV infection and pneumocystic pneumonia. Explaining. It is well known that combination Amoksiklav (Amoxicillin + Clavunate) + Levofloxacin are include respiratory fluor kinolones (as Levofloxacin). This antibiotic is drug of choose for community – acquired pneumonia due to streptococcus pneumonia. The vancomycin it is drug of choose due to MRSS staphylococci. As well known when we are got ineffectiveness after cause of the medication with combination Amoksiklav (Amoxicillin+Clavunate) + Levofloxacin + vancomycin we are need considered diagnosis as atypical pneumonia. In this clinical case within the last two days the patient's dyspnea and intoxication acutely exacerbated, bilateral pulmonary infiltrates are observed. As known dyspnea is it typical symptom pneumonia cause by pneumocystic and other point for atypical pneumonia is it ineffectiveness after cause of the medication with first line of antibiotics</p>	<p>Harrison's principles of internal medicine. – 19th Edition. – Pneumonia. – P. 803. – Pneumocystis infections. – P. 1358. The Human retroviruses. – P. 1215</p>

Task № 20	Example for solution of task	References
<p>The dermatologist has an appointment with a 30-year-old man that complains of severely itching rashes that especially disturb him at night. The rashes developed 2 weeks ago, after he had returned from a travel. Objectively on the lateral surfaces of his fingers-, hands, wrists, elbows, lower abdomen, genitals, and thighs there are paired papulovesicles, single pustules, and scratch marks. What disease can be suspected?</p> <p>A. <i>Scabies</i> B. <i>Pyoderma</i> C. <i>Eczema</i> D. <i>Dermatitis</i> E. <i>Shingles</i></p>	<p>Correct answer: Scabies. Explaining. The agent of Scabies is <i>Sarcoptes scabiei</i>. The human itch mite, <i>Sarcoptes scabiei</i> var. <i>hominis</i>, is a common cause of itching dermatosis, infesting ~300 million persons worldwide at any one time. Gravid female mites (~0.3 mm in length) burrow superficially within the stratum comeum, depositing three or fewer eggs per day. Six-legged larvae mature to eight-legged nymphs and then to adults. Gravid adult females emerge to the surface of the skin about 8 days later and then (re)invade the skin of the same or another host. The itching and rash associated with scabies derive from a sensitization reaction to the mites and their secretions/excretions. A person's initial infestation remains asymptomatic for up to 6 weeks before the onset of intense pruritus, but a reinfestation produces a hypersensitivity reaction without delay. Pruritus typically intensifies at night and after hot showers. Classic burrows are often difficult to find because they are few in number and may be obscured by excoriations. Burrows appear as dark wavy lines in the upper epidermis and are 3–15 mm long. Scabies, with typical scaling erythematous papules and few linear burrows. Groin, axillae, between fingers and toes, beneath breasts</p>	<p>Harrison's principles of internal medicine. –19th Edition. – Ectoparasite Infestations and Arthropod Injuries. – P. 2744. Approach to the Patient with a Skin Disorderc. – P. 339. Skin Manifestations of internal Disease. – P. 353</p>

Task № 21	Example for solution of task	References
<p>A 16-year-old adolescent living in a rural area has been bitten in the shin by a stray dog. The wound is superficial. Regular vaccination against tetanus was received 3 months ago. What treatment tactics would be the most advisable in this case?</p> <p>A. <i>Antirabies vaccination</i> B. <i>Antitetanus immunoglobulin</i> C. <i>Antitetanus serum</i> D. <i>Antirabies immunoglobulin</i> E. <i>Tetanus toxoid adsorbed</i></p>	<p>Correct answer: Antirabies vaccination Explaining. As known 16-year-old adolescent has been bitten in the shin by a stray dog. There is real risk of rabies in this situation. Rabies is a rapidly progressive, acute infectious disease of the central nervous system (CNS) in humans and animals that is caused by infection with rabies virus. The infection is normally transmitted from animal vectors. Rabies has encephalitic and paralytic forms that progress to death. Since there is no effective therapy for rabies, it is extremely important to prevent the disease after an animal exposure. Postexposure Prophylaxis (PEP) includes local wound care and both active and passive immunization</p>	<p>Harrison's principles of internal medicine. – 19th Edition. – Rabies – P. 1299–1301</p>

Task № 22	Explanation of the task	References
<p>A 22-year-old woman complains of itching and profuse discharge from her genital tracts. The condition developed 10 days ago after a sexual contact. Bacterioscopy of a discharge sample detected trichomonads. What drug should be prescribed for treatment in this case?</p> <p>A. <i>Metronidazole</i> B. <i>Valcyclovir</i> C. <i>Ampicillin</i> D. <i>Zovirax (Acyclovir)</i> E. <i>Erythromycin</i></p>	<p>The correct answer: Metronidazole Logic of answer. <i>Trichomonas vaginalis</i> is the etiological agent of trichomoniasis, the most prevalent non-viral sexually transmitted disease worldwide. Classical symptoms include a malodorous and purulent discharge which results in local pain and irritation. Currently, metronidazole and tinidazole drugs are most commonly used for treatment of trichomoniasis by oral and parenteral routes</p>	<p>Workowski K. A. Centers for Disease Control and Prevention (2015). Sexually transmitted diseases treatment guidelines, 2015. MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports, 64(RR-03) / K. A. Workowski, G. A. Bolan. – P. 1–137</p>

Task № 23	Explanation of the task	References
<p>A 46-year-old man came to the surgeon's office. He complains of twitching sensation in the wound on his left foot, insomnia, and anxiety. According to the patient, he received this wound 5 days ago, when he accidentally stepped on a glass shard, while on the beach. He requested no medical assistance. Objectively the patient's general condition is satisfactory, pulse is 75/min., blood pressure is 130/80 mm Hg, temperature is 36.9 °C. On the plantar surface of his foot there is a wound 1.5 cm long and up to 3 cm deep. The wound edges are moderately hyperaemic, no discharge from the wound is observed. What disease can be suspected in this patient?</p> <p>A. <i>Tetanus</i> B. <i>Fasciitis</i> C. <i>Diphtheria</i> D. <i>Anthrax</i> E. <i>Phlegmon</i></p>	<p>The correct answer: Tetanus Logic of answer. You should suspect tetanus if a cut or wound is followed by one or more of these symptoms: stiffness of the neck, jaw, and other muscles, often accompanied by a grotesque, grinning expression, difficulty swallowing, irritability, uncontrollable spasms of the jaw, called lockjaw, and neck muscles</p>	<p>Kasper Dennis L. Harrison's infectious diseases / Dennis L. Kasper, Anthony S. Fauci. – The McGraw-Hill Companies, Inc., 2010. – P. 429–434</p>

Task № 24	Explanation of the task	References
<p>A 17-year-old girl has made an appointment with the doctor. She plans to begin her sex life. No signs of gynaecological pathology were detected. In the family history there was a case of cervical cancer that occurred to the patient's grandmother. The patient was consulted about the maintenance of her reproductive health. What recommendation will be the most helpful for prevention of invasive cervical cancer?</p> <p>A. <i>Vaccination against human papillomavirus (HPV)</i> B. <i>Timely treatment of sexually transmitted diseases</i> C. <i>Immunomodulators</i> D. <i>Antiviral and antibacterial drugs</i> E. <i>Vitamins, calcium, omega-3</i></p>	<p>The correct answer: Vaccination against human papillomavirus (HPV). Logic of answer: Human papillomavirus (HPV) vaccine prevents infection by certain 57 types of human papillomavirus. Available vaccines protect against either two, four, or nine types of HPV. All vaccines protect against at least HPV type 16 and 18 that cause the greatest risk of cervical cancer</p>	<p>Workowski K. A. Centers for Disease Control and Prevention (2015). Sexually transmitted diseases treatment guidelines, 2015. MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports, 64(RR-03) / K. A. Workowski, G. A. Bolan. – P. 1–137</p>

Task № 25	Explanation of the task	References
<p>A 45-year-old veterinary worker has made an appointment with the doctor for regular examination. In his duties he frequently deals with animals, however he denies working with rabies-affected animals. Previously he has received no antirabic vaccination. What should the doctor recommend in this case?</p> <p>A. <i>Preventive immunization with antirabic vaccine</i> B. <i>Vaccination in case of contact with sick animal</i> C. <i>Preventive immunization with rabies immunoglobulin</i> D. <i>Preventive immunization with anti-rabies serum</i> E. <i>Administration of antirabic vaccine and rabies immunoglobulin</i></p>	<p>The correct answer: Preventive immunization with antirabic vaccine Logic of answer: Preexposure rabies vaccination may be recommended for veterinarians, animal handlers, field biologists, cavers, missionaries, and certain laboratory workers. In case of infrequent exposure (veterinarians and animal control staff working with terrestrial carnivores in areas where rabies is uncommon to rare; veterinary students; and travelers visiting areas where rabies is enzootic and immediate access to medical care, including biologics, is limited) Primary course of vaccination is recommended; no serologic testing or booster vaccination.</p>	<p>Kasper Dennis L. Harrison's infectious diseases / Dennis L. Kasper, Anthony S. Fauci. – The McGraw-Hill Companies, Inc. – 2010. – P. 959–965</p>

Task № 26	Explanation of the task	References
<p>A 20-year-old student was brought to the first-aid center. He has a closed fracture of the left forearm and a contused lacerated wound on his left shin. After the patient received initial wound management, he presented the documents confirming that he has received all the necessary preventive vaccination as scheduled. What should the doctor do to prevent tetanus in this patient?</p> <p>A. <i>Dynamic case monitoring</i> B. <i>Administration of anti-tetanus serum</i> C. <i>Administration of tetanus toxoid</i> D. <i>Antibiotic therapy</i> E. <i>Administration of tetanus immunoglobulin</i></p>	<p>The correct answer: Dynamic case monitoring Logic of answer: Persons who have completed the 3-dose primary tetanus vaccination series and have received a tetanus toxoid-containing vaccine < 5 years earlier are protected against tetanus and do not require a tetanus toxoid-containing vaccine or tetanus immunoglobulin (TIG) as part of wound management</p>	<p>Liang, J. L. Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports, 67(2), 1–44. doi: 10.15585/mmwr.rr6702a1 / J. L. Liang, T. Tiwari, P. Moro, N. E. Messonnier, A. Reingold, M. Sawyer, & T. A. Clark. – 2018</p>

Навчальне видання

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