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Department of infectious diseases

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INFECTION DISEASES WITH AIR-DROP MECHANISM OF TRANSMISSION

Module 4

Manual for practical training and independent work

For students of the 5th year of medical faculty

Specialty *222*«General Medicine»

Master's level of training

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INTRODUCTION

Infection diseases with airborne mechanism transmission are the most common in the structure of all infectious diseases. All this diseases combined airborne mechanism transmission.

Droplet infection is a group of acute inflammatory diseases with defeat of the upper respiratory tract, various organs and tissues. This group of diseases has a number of features: air-drop mechanism of transmission; expressed by local changes, combined with the general poverty; prevalence of disease, regardless of age and gender; it is highly contagious; increasing incidence in the cold season; tendency to epidemics.

This manual presents modern data on the etiology, epidemiology, pathogenesis, clinical manifestations, diagnosis and treatment of infection diseases with airdrop mechanism of transmission as well as the indicative amount of the scheme, the timing of examination of patients and interpretation of the results. The annex presents the algorithms of diagnostics, treatment of these diseases and diagnostic test systems permitted for use.

The considerable economic, ecological, and public health impacts of Infection diseases with airborne mechanism transmission are expected to continue, given limited domestic and international capabilities for detecting, identifying, and addressing likely epidemics. Much remains to be discovered about the biology of these diseases, and in particular about the complex biological and ecological relationships that exist among pathogens, vectors, hosts, and their environments. Such knowledge is essential to the development of novel and more effective intervention and mitigation measures for Infection diseases with airborne mechanism transmission diseases.

INFLUENZA
ACUTE RESPIRATORY VIRAL INFECTION
SARS

Actuality of theme

Presently influenza is the most widespread infection on earth and registered on all of continents. The feature of this infection is unbelievable speed of distribution – a large place is engulfed a disease for 1,5-2 weeks, large country – for 3-4 weeks. During epidemic flashes up to 30-50% population of the staggered region is ill, that results in large epidemic losses. About 30 million persons have influenza in the quietest years. Now influenza remains uncontrolled and low controlled as an infection. The index of death rate of the uncomplicated influenza is low and makes 0,01-0,2, but it is sharply increased in the case of origin of influenza for elderly and hyposthenic people, especially at those, who has chronic diseases of heart, lungs, and for the youngest children. During the epidemic of influenza lethality is always increased from cardio-vascular, pulmonary diseases. It is calculated, that the uncomplicated influenza and other respiratory diseases take away at least 1 year of life for everyone.

It was found out that new properties of influenza exciters is ability to be exchanged genetic information with the influenza exciters of animals, ability to be kept for a long time in the organism after convalescence and even, as think, to be one of possible factors of slow infections development – all this factors cause in strengthen meaningfulness of this problem and necessity of subsequent study of influenza.

Pathogenesis of Influenza: at the heart - circulatory disorders which are due to violation of the tone, elasticity and increased permeability of the capillaries, as well as reduced immunity, against which join secondary infection.

Clinic: The incubation period of 12 to 48 hours.

Clinical variants of the flu:

a) the typical flu - begins acutely, in most cases with chills or chilling. Body temperature is already on the first day up to a maximum level (38-40 ° C). Clinically manifested syndrome of general toxicity and signs of lesions of the respiratory tract (scratchy throat, dry cough, chest pain bruised along the trachea, nasal congestion, hoarseness). OBJECTIVE: flushing of the face and neck, vascular injection sclera, moist bright eyes, increased sweating. In the future may appear herpetic rash on the lips and around the nose. There is a kind of hyperemia and granularity of the mucosa throat. On the part of the respiratory system - signs of rhinitis, pharyngitis, laryngitis. Especially characteristic of the trachea damage, bronchitis occurs much less frequently, and lung (pneumonia, influenza) is regarded as a complication. In addition toxic symptoms at the height of the disease may not appear sharp expression-conjugated meningeal signs (neck stiffness, Kernig symptoms Brudzinskogo), which disappear after 1-2 days. The pathological changes in the cerebrospinal fluid are not detected. Blood picture with no complicated influenza is characterized by leukopenia or normocytosis, neutropenia, Eosinopenia, relative limfomonotsitozom. ESR is not accelerated.

For a mild form of influenza is characterized by increased body temperature is not more than 38 ° C, mild symptoms intoksika-tion and destruction VAR. In moderate form - the body temperature within 38,1-40 ° C. Very severe forms of influenza are rare, characterized by a fulminant course with rapidly developing symptoms of intoxication, no-kata eral events and ending in most cases lethal. A variant form of lightning can be the rapid development of hemorrhagic toxic pulmonary edema and death from parenchymatous respiratory and cardiovascular failure in case of untimely emergency and medical specialist in power.

Flu in children has a more severe course of the process, more frequent development of complications, reduces the reactivity of the child's body and aggravates the course of other diseases. Violation of the general condition, feverish reaction and amazed-of TTP are more pronounced and prolonged, often reaching 5-8 days. Persons 60 years of age and older get the flu harder than the young age of the person. Longer

stretched in time all the periods of the disease, more severe course with frequent complications, the gradual development of the disease, in the foreground disorders CCC (dyspnea, cyanosis of nasolabial triangle and mucous membranes, tachycardia akrotsianoz in the background and a sharp decline in blood pressure). The phenomena of intoxication are less pronounced. The duration of febrile period to 8-9 days, the temperature drops slowly for a long time remained low grade b) the atypical flu

1) afebrile

2) akataralny

3) fulminant

According to the severity of the flu can be mild, moderate, severe and very severe; by the presence of complications: complicated and uncomplicated.

Laboratory diagnosis: for rapid diagnosis of influenza - virus detection using fluorescent antibodies. The test material is taken from the nose in the first 3 days, smears are prepared and treated with their specific fluorescent influenza sera. The resulting antibody-antigen complex is very bright in the nucleus and cytoplasm of tubular epithelial cells and is clearly visible in the fluorescent microscope. The answer can be obtained within 2-3 hours. Serology is used for retrospective diagnosis of influenza (RSK, HI), is a diagnostic Naras tanie-antibody titer 4 times or more.

Treatment:

1. mild and moderate forms are treated at home, heavy and complicated - in an infectious diseases hospital

2. during the febrile period - bed rest, heat, plentiful hot drink with a large amount of vitamins C and P (tea, juice, fruit drink).

3. to reduce the severe headache and muscle pain, shortening the manifestations of toxicity and inflammatory changes in the airways - "antigrippin" (acetylsalicylic acid, ascorbic acid, calcium lactate, rutin and diphenhydramine) for 3-5 days to 1 powder 3 times a day , koldreks aspirin UPSA with vitamin C, analgesics - Amidopyrine, Panadol, tempalgin, sedalgin 1 tablet 2-3 times a day.

4. antipyretics (acetylsalicylic acid mono- 0.5) - only at high temperature, achievement-ticle 39 ° C or more and 38 ° C - in children and elderly persons.

5. complex vitamin ("Revit", "Geksavit", "Undevit")

6. Antiviral therapy: OZELTAMIVIR 75 mg 2 time a day, ZANAMIVIR 2 breaths 2 times a day, rimantadine (effective in the treatment of influenza caused by virus type A, and only when it is used early - in the first hours and days of onset), influenza donor immunoglobulin (gamma globulin)

7. to improve the drainage function of the bronchi and increase the evacuation of mucus and phlegm - warm, moist inhalation, with-holding soda and bronchodilators (solutan, aminophylline, ephedrine)

8. in severe rhinitis - nasal 2-5% solution of ephedrine, 0.1% solution Sanorin, Naphthyzinum, galazolin.

9. detoxification therapy (gemodez, reopoligljukin, laktasol + Lasix - forced diuresis)

10. in very severe forms of influenza with severe toxicities - 10,000-20,000 IU kontrikala, oxygen humidified oxygen through nasal catheters or ventilator, anti-staphylococcal action AB (oxacillin, methicillin, cephalosporin injections 1.0 four times a day).

Flu complications and their treatment.

Complications of influenza: 80-90% - acute viral and bacterial pneumonia, then the complications of the upper respiratory tract (gai-Morita, otitis, frontal sinusitis, sinusitis), at least - pyelonephritis, pyelocystitis, cholangitis, and others.

Pneumonia - in young people is dominated by early pneumonia occurring at 1-5 day from the beginning of the disease, usually in severe catarrhal syndrome and general intoxication. The clinic is characterized by prolonged fever (more than 5 days) or the emergence of a second wave of the temperature after the short-term normalization of body temperature. During the flu is no positive dynamics, both in the state and the state of health of the patient. There remains severe weakness, sweating, chills, shortness of

breath. Joins cough with mucopurulent or bloody sputum. Auscultation finely moist rales, crackling, wheezing can be auscultated in the position of the patient on the affected side (reception Kuravitskogo) or after a short coughs. The majority of patients in the blood - leukocytosis, elevated erythrocyte sedimentation rate.

Treatment of pneumonia: a complex pathogenetic treatment of influenza + AB 7-10 days cephalosporins III generation (cefotaxime, ceftriaxone, ceftazidime parenterally).

With the development of other infectious complications - rational antibiotic therapy, depending on the intended pathogen.

ARVD (clinic, laboratory diagnostics).

Acute respiratory viral diseases (ARVD undifferentiated) - all ARVD, which etiological diagnosis standard laboratory methods of investigation could not be determined.

Etiology: ARVD may be caused by more than 200 different etiologic agents (influenza viruses, parainfluenza, RSV, coronavirus, rhinoviruses etc.)

Epidemiology: source - the sick person, the route of transmission - airborne.

Pathogenesis: the penetration of the pathogen into the body through the TTP and its application in the tropic tissues; colonization of the tropic tissues, different stages of the cytopathic effect on the cells and tissues of the respiratory system; penetration mikroorga-organisms and their metabolites in the internal environment of microorganism with the development of local and systemic reactions in response to infection; oppression of local factors and general protection to the possible development of complications (bacterial superinfection); Forma-tion of specific immunity, activation of factors of nonspecific protection, elimination of the pathogen, the revolt-tion of disturbed structures and functions of the microorganism, recovery.

Clinic: regardless of the etiology of clinical syndromes characterized by two binding: the general infectious intoxication of varying severity; respiratory tract lesions at various levels. Some etiological agents, in addition to these manifestations, are

responsible for a number of other syndromes: false croup during parainfluenza infection in children; conjunctivitis and keratoconjunctivitis, acute tonsillitis, lymphadenopathy with adenoviral-zabole vaniyah; myalgia and gerpangina with enteroviral diseases; enlargement of the liver and / or spleen with Chlamydia, Mycoplasma, and adenovirus infections; pneumonia when ornitoznoy, Mycoplasma, Legionella and Pneumococcus-ing infections (pneumonia for most ARVD is a complication and is usually viral and bacterial in nature).

Diagnosis: clinical diagnosis of ARVD is very difficult, in all cases put nozosindromalny diagnosed with acute-REP-valued, indicating the disease syndromes of defeat of the respiratory tract, the period of illness, days of illness, and the severity of the condition, which developed emergency conditions and complications. Determining the nature of the inflammation is possible on the basis of the KLA (for ARVD - leukopenia, and a tendency to lymph and monocytosis).

The etiological diagnosis:

a) methods for rapid diagnosis - can get a preliminary response within a few hours of the post-captivity samples to the laboratory (IFA, ELISA, nucleic acid hybridization methods, PCR)

b) methods of serological diagnosis - the basis - increasing the detection of specific antibodies in the dynamics of SARS through various immunological reactions - RSK, HAI, RN, ELISA. Diagnostic value of a four-fold or more increase in the titer of specific antibodies to the pathogen infection in the HAI, RSK.

Parainfluenza (clinic, diagnostics).

Parainfluenza - Marketing RNA virus (Paramyxoviruses).

Clinic: The incubation period usually 3-4 days; It occurs as a short-term illness (no more than 3-6 days), without you-expression of intoxication; It begins acutely only half of the patients in the other it begins gradually. Intok-sikatsiya expressed mild, but noted in the majority. Worried low-grade body temperature, weakness, go-nal pain. The clinical picture is dominated by signs of lesions of the upper respiratory tract: pain and

sore throat, nasal congestion, dry cough, rhinopharyngitis symptoms. In children it can cause acute laryngitis with stenosis of the larynx syndrome ("false croup"). Complications: pneumonia.

Diagnosis: can be confirmed by detection of viral AG in the epithelial cells of the nasal mucosa when immunofluo-fluorescence.

Clinical forms of acute respiratory viral infection (influenza, parainfluenza, adenovirus, and rhinovirus infection).

Clinic rhinovirus infection: disease duration up to 7 days. Children can be a fever in adults rose-shenie temperatures rarely. Leading symptoms - runny nose with abundant serous discharge, which at first watery, then mucous. Often Pershai dry cough, congestion eyelids, watery eyes. In young children-a Protek disease harder than adults, due to the more pronounced catarrhal symptoms. Complications are rare.

Clinic adenovirus infection: incubation period of 4 to 14 days; main clinical forms: rhinopharyngitis, rinofaringotonzillity, pharyngoconjunctival fever, conjunctivitis and keratoconjunctivitis, adenovirus pneumonia, other clinical forms (diarrhea, acute nonspecific mesenteric adenitis). For any of clinical forms ha istic totality of the defeat of the respiratory tract and other symptoms (conjunctivitis, diarrhea, mesenteric adenitis and others.), Only keratoconjunctivitis can occur in isolation, without the destruction of the respiratory tract. Onset acute in elevated temperatures, signs of intoxication (chilling, headache, weakness, loss of appetite, muscle pain, etc..). Even with a high fever, the general condition remains satisfactory and the toxicosis of an organism does not reach the extent of influenza. Fever is long, lasts up to 6-14 days, sometimes has two-wave character. When adenoviral diseases proceeding only with a lesion of the upper respiratory tract, the temperature is maintained for 2-3 days and often do not exceed subfebrile. The elderly suffer from adenovirus infection is rare.

2. Study purpose of practical studies:

2.1. Student have to know*:* ***a-2***

- etiology of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses factors of pathogenesis and exciter;
- epidemiology of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses;
- pathogenesis;
- clinical signs of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses
- pathogenesis, terms of origin and clinical signs of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses complications;
- diagnostics of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses;
- principles of treatment;
- principles of prophylaxis, categories of persons which must undergo vaccination
- treatment of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses, indications to antibiotics prescription;
- indications for hospitalization of patients with influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses.

2.2. Student have to be able: ***a-3***

- to adhere the basic rules of patient with influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses bedside work;
- to ask history case with the estimation of epidemiology information;
- to inspect a patient and find out basic symptoms and syndromes of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses, argument a clinical diagnosis, determined with the necessity of hospitalization;
- to conduct differential diagnostics of influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses;
- on the basis of clinical inspection to recognize possible complications of influenza, urgent cases;
- to design a medical document in fact of establishment of previous diagnosis “influenza, parainfluenza, adenovirus infection, RSV, coronavirus, rhinoviruses ” (urgent report to epidemiology serve);
- to work out on the plan of laboratory and additional investigation of patient;
- to interpret the results of laboratory tests;

- to work out on the individual plan of treatment including the epidemiology information, syndromes of illness, complications, heavily of flow, allergic anamnesis, concomitant pathology; to provide the first aid on the stage up to hospitalization;
- to work out a plan of disease and prophylactic measures in the region of infection;
- to give recommendations in relation to the mode, diet, inspection, supervision in the period of rehabilitation.

3. Materials for out-class self-training (before practical classes)

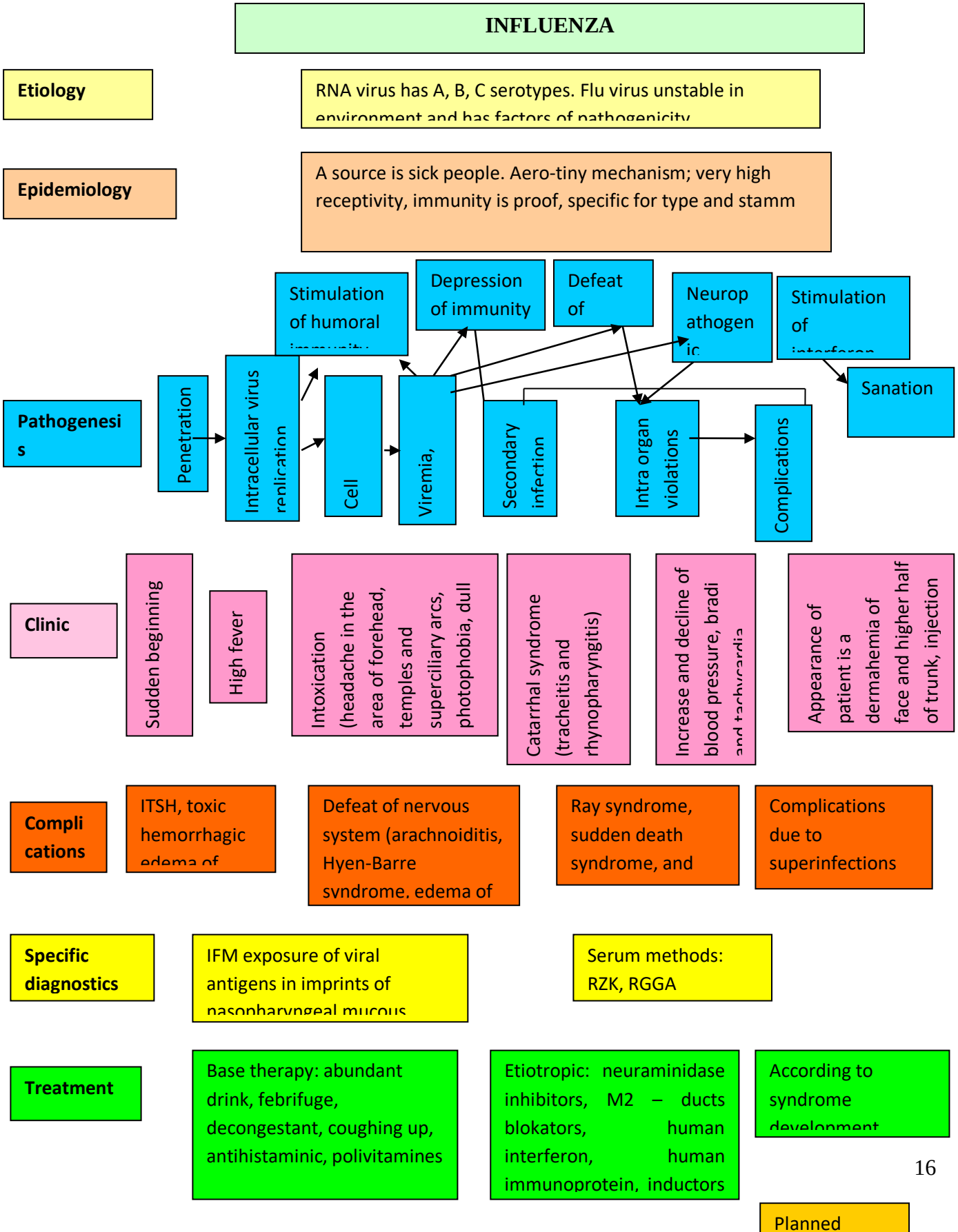
3.1. Basic knowledge, skills which are necessary for studying of topic (interdisciplinary integration)

Discipline	To know	To able
Previous disciplines		
Anatomy	Structure of pharynx, nose, larynx, trachea, bronchial tubes, lungs, heart, nervous system	
Histology	Structure of mucous membrane of nose, larynx, pharynx, trachea	
Microbiology	Properties of flu virus; methods of specific flu diagnostics	To interpret the results of specific methods of flu diagnostics.
Physiology	Parameters of physiological norm of organs and systems of man; indexes of laboratory inspection are in a norm (general blood, urine, biochemistry of blood analyses, parameters of electrolytes and other parameters).	To estimate information of laboratory inspection.
Physiopathology	Mechanism of violation of organs	To interpret pathological

	functions and systems by the different pathogens.	changes on results a laboratory inspection at parafunctions organs and systems of different genesis.
Pathological anatomy	Change of structure of mucous membrane of pharynx, amygdales, nose, lymph nodes, epithelium of kidney tubules, structures central and peripheral NS, myocardium.	To determine local changes
Pharmacology	Groups of preparations which are used for treatment of disease, dosage (valid for one occasion and day's), their side effects, contra-indications et cetera	To write recipes
Internal diseases	Methods and basic stages of patient clinical inspection. Symptoms and syndromes of disease.	To ask history, provide examination of patient, find out pathological symptoms and syndromes. To analyze findings.
Neurology	Pathogenesis, clinical signs of toxic edema of brain, arachnoiditis, syndrome Hyen – Barre, polyneuritis, Ray syndrome	To conduct the clinical inspection of patient with the defeat of the nervous system.
Clinical pharmacology.	Pharmacokinetics and pharmacodynamics, side effects of levomicetin, ciprofloxacin, facilities of nosotropic therapy.	To appoint treatment depending on age, individual features of patient, to choose the optimum mode of reception and dose of preparation, write recipes.
Intensive care	Urgent states:	To diagnose and provide the first aid in time at the

	• TSh • Edema of brain • Hemorrhagic edema of lungs • Acute respiratory insufficiency • Acute cardiac insufficiency • Acute vascular insufficiency	urgent states: • ITSh • Enterorrhagia • Enterobrosia • Infectious-toxic encephalopathy
Subsequent disciplines		
General practice	Pathogenesis, epidemiology, dynamics of clinical signs, possible complications of flu. Principles of prophylaxis and treatment.	To conduct differential diagnostics of illnesses of different genesis with a flu. To recognize a flu, complications; to interpret information of laboratory inspection. To define the necessity of hospitalization of patient for infectious permanent department. To fill an urgent report. To render the first aid in the case of necessity.
Internal integration		
Infectious diseases.	Features of infectious diseases. Principles of diagnostics, treatment, prophylaxis of infectious diseases. Pathogenesis, epidemiology, dynamics of clinical signs, laboratory diagnostics, possible complications of flu. Principles of prophylaxis and treatment.	To conduct differential diagnostics of flu with other infectious diseases: respiratory diseases, by typhoid, meningococcal disease, leptospirosis, by viral hepatitis. In addition, by meningitis, spotted fever. To recognize a influenza, his complication; to interpret information of laboratory inspection. To appoint treatment. To render the first aid on the stage before hospitalization.

3.2 Theme contents.



SARS

etiology

RNA- contains parainfluenza viruses, PC-virus, rhinovirus, DNA – contains adenovirus. Being unstable in the environment, adenovirus and rhinovirus are stable in low temperatures.

epidemiology

Source – the sick and the carrier of the virus. Transmission of infection – airborne and fecal-oral (for adenoviral infection).

pathogenesis

penetration → Virus withdrawal, cell distruction → Catarrhal syndrome development, viremia, Toxemia → Immunity formation, Recovery

clinics

- Parainfluenza – gradual beginning, torpent course, larvngitis occurrence.
- Rhinovaral infection – absence of frank intoxication, rhinorrheia of mucous or
- Respiratory-syncytial infection –absence of high пропасниц, combination of rhinorrheia with the affection of the lower respiratory passages among kids, upper
- Adenoviral infection – possibility of combining respiration syndrome with conjunctivitis, hepatosplenomegaly, lymphadenopathy,

compl icatio ns

- Parainfluenza is not a real croup, meningocephalitis, secondary bacterial
- RVI– sinusitis, otitis, rare – pneumonia, mastoid, purulent meningitis
- Respirational -Syncytial infection – bronchospasm, sudden death syndrome,encifalopathy, encifalitis,meningitis,
- AVI – partial atelectasis, multiple bronchiectasis, joining of the secondary virus – pneumonia sinusitis, otitis

Specific diagnostics

- IFR, IFA – discovering of the viral antigens in swabs and prints out of the throat mucous shell
- Serological methods: РЗК, РГГА

treatment

- Basic therapy: intense drinking, febrifuge, decongestants, expectorants, antihistamines, poly
- Etiotropic: inductors of the endoginic enterferone ,regular enterferone
- Syndromatic: according to the syndrome development

Prophylaxis

- Non-specific
- specific → urgent

3.4. Self-control materials

3.4.1. Questions to be answered

1. What group of infectious diseases does flu, parainfluenza, adenovirus infection belongs to by the source of infection?
2. To give description of exciter of flu, parainfluenza, adenovirus infection factors of aggression, different of viral serotypes and antigen variants.
3. To give determination of antigen drift and shift.
4. Mechanism of transmission of flu, parainfluenza, adenovirus infection.
5. Pathogenesis of flu and common clinical symptoms.
6. Classification of flu, parainfluenza, adenovirus infection.
7. To describe basic clinical symptoms and name the criteria of weight of flu, parainfluenza, adenovirus infection.
8. What are possible complications of influenza, parainfluenza, adenovirus infection.
9. What are diagnostic criteria's of influenza, parainfluenza, adenovirus infection complications.
10. Consequences of flu, parainfluenza, adenovirus infection.
11. Plan of inspection of patient flu, parainfluenza, adenovirus infection.
12. Methods of specific flu diagnostics.
13. Etiotropic therapy of flu, parainfluenza, adenovirus infection.
14. Principles of basic therapy.
15. Terms and indications of antibacterial therapy at flu prescribing.
16. Unspecific prophylaxis of flu, parainfluenza, adenovirus infection.
17. Specific prophylaxis of flu, parainfluenza, adenovirus infection.
18. Categories of persons which a vaccination is prescribed above all.
19. What kind of rash is typical for influenza, parainfluenza, adenovirus infection.
20. What kind of shock can develop during influenza, parainfluenza, adenovirus infection.

3.4.2. Self-control tests

Choose right answers **α=2**

1. The main symptom of intoxication syndrome is:

A. fever

B. weakness, loss of appetite

C. arthralgia

D. Headache

E. * all right

2. What is the virus belongs to a group of SARS:

A. * coronavirus

B. norfolk

C. herpes simplex

D. rotavirus

E. Measles

3. SARS is characterized by:

A pathogen introduction into the cells of the airway epithelium

B. viremia developmental toxicity

C. Development of inflammation in the respiratory system

D. the formation of immunity

E. * all right

4. Rhinitis is characterized by:

A difficulty of nasal breathing

B. mucous discharge from the nose

C. maceration of the skin around the nostrils

D. sneezing

E. * all right

5.The main symptoms of pharyngitis:

A sore throat

B. dry throat

C. pain when swallowing

D. subfebrilitet

E. * all right

6. For tonsillitis is characterized by all except:

A. * hoarseness

B. redness of the tonsils

C. hyperemia Pillar Palatal

D. redness of the tongue

E. swollen tonsils

7. The dry barking cough and hoarseness are characteristic:

A. pharyngitis

B. laryngitis *

C. tonsillitis

D. tracheitis

E. bronchiolitis

8. A sense of rawness in the chest and a dry cough are typical for:

A. pharyngitis

B. laryngitis

C. tonsillitis

D. * tracheitis

E. bronchiolitis

9. To which the family belongs to the influenza pathogen:

A. * orthomyxoviruses

B. flaviviruses

C. retroviruses

D. herpesviruses

E. paramyxoviruses

10. Which pathogens SARS DNA contains:

A. rhinovirus

B. Influenza virus

C. parainfluenza virus

D. * adenovirus

E all right

11. The causative agent of SARS is:

A flu virus

B. polio virus

C. * Legionella

D. adenovirus

E. pneumococcus

12. Which family member pathogen respiratory syncytial virus infection:

A. * paramyxoviruses

B. flaviviruses

C. retroviruses

D. herpesviruses

E. orthomyxoviruses

13. The internal antigens of influenza virus are presented:

* A nucleoprotein and membrane protein

B. lipoprotein envelope

C. hemagglutinin

D. neuraminidase

E all right

14. The surface antigens of the influenza virus are presented:

A nucleoprotein

B. lipoprotein envelope

C. * neuraminidase and hemagglutinin

D. Membrane protein

E all right

15. Pathogen ornithosis:

A. * Chlamydia

B. virus

C. mycoplasma

D. prions

E. protozoa

16. Pathogen SARS belongs to:

A rotaviruses

B. ortomiksovirusov

S. enterovirus

D. adenoviruses

E. * koronarovirusam

17. Which family member pathogen parainfluenza:

A. orthomyxoviruses

B. flaviviruses

C. retroviruses

D. herpesviruses

E. * paramyxoviruses

18. Which family member pathogen rhinovirus infection:

A. * picornavirus

B. orthomyxoviruses

C. retroviruses

D. herpesviruses

E. paramyxoviruses

19. What is the antigenic drift of influenza virus:

* A point mutations within the viral genome in the strain

B. recombination hemagglutinin and neuraminidase

C. antigenic changes in the virus within serovar

D. genetic recombination between different strains of influenza virus neuraminidase variability

E. all true

20. What is the influenza virus antigenic shift:

A genetic recombination between different strains of influenza virus

B. antigenic changes in the virus within a subtype

C. antigenic changes in the virus within serovar

D. variability neuraminidase

* E. recombination hemagglutinin and neuraminidase with the formation of a new strain

21. The reservoir of infection with psittacosis may be:

A. * poultry

B. rodents

C. fish

D. people

E all right

22. The source of infection with psittacosis may be:

A. pigeons

B. parrots

C. canaries

D. duck

E. * all right

23. What is the mechanism of transfer characteristic of the flu:

A. * air - drop

B. parenteral

C. transmissible

D. alimentary

E. vertical

24. The source of infection with influenza A:

A bird

B. rodents

C. cattle

D. * people

E all right

25. Seasonality of the flu:

A spring-summer

B. summer-autumn

C. * autumn and winter

D. winter-spring

E. seasonality is not characteristic

26. Sick flu is most dangerous:

A * at the end of the incubation period and the entire period of fever

B. in the incubation period

C. 5-7 days of illness

D. during convalescence

E are not dangerous to others

27. By the risk of occurrence of atypical pneumonia caused by Legionella pneumophila, include:

A. Patients with concomitant pathology of bronchopulmonary

B. Persons working in a room with air conditioning

C patients with immunodeficiency

D. diabetics, smokers

E. * all right

28. Specify the epidemiological features of a respiratory mycoplasmosis:

* A flash in organized collectives gated

B. pathway water

C. transmissible mechanism of transmission

D. is typical spring-summer season

E. infection occurs through contact with birds

29. Specify legionellosis transmission factor:

A drinking water

B. dust when processing grain

C. * aerozol that contains the pathogen in the air conditioning systems

D. bloodsucking insects

E. products without heat treatment

30. Source of infection respiratory mycoplasmosis:

* A sick man

B. rodents

C. bird

D. insects

E all right

31. The influenza virus replicates in:

A. mucosa migdalin

B. *columnar epithelium cytoplasm into the upper respiratory tract mucosal cells.

C With the solitary follicles of the intestine

D. epithelial cells of the skin

E. digestive tract mucosa

32. Epiteliotropnost influenza clinically:

A. rhinitis

B. pharyngitis

C. laryngitis

D. * tracheitis

E. bronchiolitis

33. Identifying the factors of nonspecific resistance of the respiratory tract with influenza:

A viscous properties of the mucus

B. movement of the cilia of columnar epithelium

C. macrophages

D. secretory IgA

E. * all right

34. The peculiarities of microorganisms that cause SARS, include:

A. * ability to cause pathological changes mainly in the interstitial lung tissue

B. products exotoxin

C. ability to persistence in the human body

D. blocking phagocytosis

E A's ability to replicate in a microorganism glia

35. Infection atriums with adenoviral infection are:

A skin

B. oral mucosa

C. * the mucosa of the upper respiratory tract

D. mucous membrane of the small intestine

E. mucosa of the colon

36. Duration postinfektsionnogoimmuniteta with influenza A:

A. Up to 3 months

B. to 6 months

C. up to 1 year

D. Up to 2 years

E * up to 3 years

37. Patient F, in February zabolelala sharply with increasing T to 39.4 ° C, headache in the forehead and temples, pain in eyeballs, aches throughout the body, nasal congestion, dry cough. Diagnosis:

A. * Influenza

B. adenoviral infection

C. parainfluenza

D. psittacosis

E. respiratory syncytial infection

38. Specify the clinical form of ornithosis:

A. pneumonic

B. flu-like

C. tifopodobnaya

D. meningeal

E. * all right

39. For a typical form of ornithosis characterized by all except:

A *positive meningeal signs

B. intoxication syndrome

C. fever

D. Respiratory failure

E. hepatosplenomegaly

40. B. 20 years old, complains of T up to 39 ° C, headache, pain in eyeballs, photophobia, muscle aches, dry cough. Acutely ill. Status of moderate severity. Face hyperemic, scleral injection. In light scattering, dry wheezing, oropharyngeal mucosa giperimirovana grainy. Diagnosis:

A meningococcal infection

B. measles

C. * Flu

D. parainfluenza

E. typhus

41. B. 18 years old, appealed on 2 days of illness with complaints of T 37.5 ° C, general weakness, mild sore throat, runny nose, swelling of the face, watery eyes. Objectively: a

slight redness palatine arches and migdalin. Conjunctivitis. Palpable soft, painless submandibular, cervical and axillary lymph nodes. Diagnosis:

A meningococcal nasopharyngitis

B. flu

C. diphtheria

D. * adenoviral infection

E. infectious mononucleosis

42. B. 20 years old, he fell ill acutely, complaining of a severe headache in the temples and the area of the orbit, body aches, dry painful cough. T 39 ° C. Adynamic, oropharyngeal mucosa "burning" in the lungs wheezing does not listen. Diagnosis:

A. * Influenza

B. pneumonia

C. parainfluenza

D. rhinovirus infection

E. meningococcal infection

43. B. 18 complaints of mucous discharge from the nose, swelling of the face and eyelids, tearing, scleritis, conjunctivitis, slight redness in the throat, hypertrophy of the follicles of the posterior pharyngeal wall. On the third day of the disease the conjunctiva appeared dense yellowish-white film. Diagnosis:

A. infectious mononucleosis

B. flu

C. parainfluenza

D. rhinovirus infection

E. * adenoviral infection

44. B. 19 years, on the second day of illness complaints of nasal congestion, low-grade body temperature, mucus from the nose, constant drying of the mucous membranes of the mouth, pharynx, skin near the nostrils macerated.

A. * rhinovirus infection

B. flu

C. adenoviral infection

D. parainfluenza

E. psittacosis

45. The patient 72 years of SARS, body temperature returned to normal on day 5 of illness, barking cough changed to wet. Shortness of breath occurs during physical exertion. During a deep breath tingling under the shoulder blades. Auscultation: dry and wet finely wheezing, a slight shortening of the percussion sound right. Diagnosis:

A. psevdotuberkullez

B. adenoviral infection

C. lung tuberculosis

D. * influenza complicated by pneumonia

E. parainfluenza

46. Specify the symptoms characteristic of parainfluenza:

* A slight intoxication, laryngitis

B. conjunctivitis

C. pharyngitis, expressed intoxication

D. hepatosplenomegaly, severe intoxication

E. bronchitis

47. The school sick 4 children: two in - filmy keratoconjunctivitis, one - the phenomenon rinofaringotonzilita, one - faringokonyuktivalnaya fever. Diagnosis:

A. parainfluenza

B. * adenoviral infection

C. enterovirus infection

D. herpes infection

E. cytomegalovirus infection

48. faringokonyuktivalnoy fever is characterized by:

A. * catarrhal or membranous conjunctivitis, pharyngitis,

B. tracheitis

C. rhinitis

D. lymphadenopathy

E. pneumonia

49. In any case it is necessary to hospitalize the patient with SARS:

A disturbance of consciousness

B. the number of respiratory movements of> 30 for 1 minute

C. arterial systolic blood pressure <90 mm. Hg. Art.

D. diastolic blood pressure <60 mm. Hg. Art.

E. * all right

50. B. 27 years with complaints of T 38.5 ° C with chills, headache significantly, mainly in the frontal region, expressed pain when moving the eyeballs. There was a dry hacking cough. Zev bloodshot, on the soft palate granular enanthema over light breath with hard shade. Diagnosis:

A. * Influenza

B. parainfluenza

C. psittacosis

D. enterovirus infection

E. adenoviral infection

51. At what infectious disease has a local reaction of the nasal mucosa with erythema, edema and significant secretion:

A. legioneloz

B. diphtheria

C. * rhinovirus infection

D. flu

E. parainfluenza

52. What syndrome is typical for respiratory syncytial virus infection:

A. * bronchitis, bronchiolitis

B. otitis

S. pharyngitis

D. tracheitis

E. conjunctivitis

53. Specify the complication of the flu:

A. pneumonia

B. hemorrhagic pulmonary edema

C. edema-swelling of the brain pulp

D. polinevrit

E. * all right

54. Specify the clinical manifestations of severe course of atypical pneumonia caused by Legionella pneumophyllia:

A. loss of consciousness

B. toxic shock

C. DIC

D. exudative pleurisy

E. * all right

55. For adenovirus infection is characterized by all except:

* A prevalence of intoxication of catarrhal syndrome

B. pharyngitis

C. conjunctivitis

D. Rush

E. lymphadenopathy

56. Specify the clinical forms of adenovirus infection:

A. rinofaringotonzillit

B. faringokonyuktivalnaya fever

C. adenoviral diarrhea

D. adenoviral pneumonia

E. * all right

57. rhinovirus infection is characterized by all except:

A. * expressed intoxication syndrome

B. serous nasal discharge

C. nasal mucosa hyperemia

D. frequent sneezing

E. subfebrilitet

58. Specify the clinical manifestations of catarrhal syndrome with influenza

A. shortness of nasal breathing

B. dry, scratchy throat

C. runny nose with 2-3 - the first day of illness

D. dry hacking cough

E. * all right

59. Specify the clinical manifestations of parainfluenza:

A low-grade fever

B. dry "barking" cough

C. hoarseness

D. mild intoxication

E. * all right

60. Specify the clinical manifestations of lesions of the respiratory system in patients with uncomplicated influenza:

A. * tracheitis

B. nasal congestion

C. pneumonia

D. sore throat

E. bronchitis

61. The most typical clinical manifestations of parainfluenza:

A. conjunctivitis

B. tonzillofaringit

C. laryngitis *

D. bowel dysfunction

E. lymphadenopathy

62. Patient H., 22 years old, sick with influenza, due to a sharp deterioration was hospitalized. Consciousness is preserved. Pale skin with cyanosis, BH - 50 in 1 min, AD -. 80/55 mm Hg, pulse - 110 in 1 min, T 39,8 ° C.. Expectorant pink frothy sputum. Percussion over the tympanic light shade with toning down in the lower divisions, are heard crackles in the lower one - the rear of the lungs. Specify a complication of the flu:

A. pulmonary edema *

B. pneumonia

C. cerebral edema

D. toxic shock

E. meningoencephalitis

63. P. 34 years, complaints about the low-grade temperature, general weakness, sore throat, conjunctivitis, rhinitis. On examination revealed signs of acute blepharoconjunctivitis, pharyngitis. Enlarged lymph nodes - neck front and back. Diagnosis:

A flu

B. Hepatitis A

C. * adenoviral infection

D. Hodgkin

E. infectious mononucleosis

64. The patient 25 years old, who was treated at home for influenza Antigrippin, aspirin, calcium gluconate, the second day of the onset of the disease appeared vomiting coffee grounds, melena. What complication occurred in a patient:

A*hemorrhagic syndrome

B. ileus

C neurotoxicosis

D. pneumonia

E. pulmonary edema

65. Patient P., 42 years old, at the beginning of the disease, nasal congestion, dryness and sore throat. After 4 hours 39C fever, headache, bright hyperemia and petechial hemorrhages of the mucous membrane of the soft palate, posterior pharyngeal wall. Diagnosis?

A. Chickenpox

B. adenoviral infection

C. meningococcemia

D. measles

E. * Flu

66. For the rapid diagnosis of influenza and SARS are used:

A. * immunofluorescence method

B. abjection on tissue culture or embryonated chicken eggs

C Biological sample.

D. CBC

E. compliment binding reaction

67. Diagnostic titer to confirm the diagnosis of psittacosis:

A. HI 1:20

B. * DGC 1:64

C. 1 DGC: 160

D. HAI 1: 200

E. RAC 1: 500

68. What changes in the clinical analysis of blood are characteristic of uncomplicated influenza:

A. neutropenia

B. relative lymphocytosis

S. leukopenia

D. hypoeosinophilia

E. * all right

69. A specific method of laboratory diagnosis of influenza is:

A. * immunofluorescence flushing nasopharyngeal

B. virological testing of faeces

C. microscopic examination of sputum

D. bacteriological blood cultures

E. biological method

70. What laboratory testing can confirm the diagnosis of influenza A. * hemagglutination reaction - an increase in antibody titer 4 times

B. hemagglutination reaction - titer of 1:50

C. hemagglutination reaction - titer of 1: 100

D. hemagglutination reaction - titer of 1: 200

E all right

71. For laboratory confirmation of SARS caused by Chlamydia pneumoniae are used:

A study of titers of antibodies to the pathogen in paired sera

B. identification of the pathogen in the patient's sputum using immunofluorescence method

C. Identification of the genetic material of the pathogen in sputum by polymerase chain reaction

D. sputum on Wednesday with chicken embryos

E. * all right

72. For the laboratory diagnosis of influenza is used:

A. identification of antigens by polymerase chain reaction

B. culturing the virus in eggs

C. Identification of virus antigens by immunofluorescence in nasopharyngeal swabs from

D. detection of antibodies to the virus in the paired sera

E. * all right

73. Specify the method of retrospective diagnosis of influenza:

A. * hemagglutination reaction

B. CBC

C. X-ray of the chest

D. polymerase chain reaction

E. immunofluorescence

74. Which media are used to isolate the influenza virus:

* A chicken embryos

B. bile broth

C medium containing blood

D. plain agar

E all right

75. Patient K., 16 years, complaints of nasal congestion, sore throat when swallowing, pain in the left eye, raising the T to 37,3 ° C. Nasal breathing is difficult, mucous discharge from the nose, redness of the mucous oropharynx, neck and enlarged submandibular lymph nodes, membranous conjunctivitis left. What kind of methods can confirm the diagnosis:

* A study of nasopharyngeal wash by immunofluorescence

B. chest X-ray

C. bacteriological examination of blood

D. examination of blood smear, and "thick" drop

E. CBC

76. Psittacosis differentiate with:

A. pulmonary tuberculosis

B. Mycoplasma pneumonia

C. influenza

D. brucellosis

E. * all right

77. For which of the following is most typical infections meningeal syndrome:

A. * Influenza

B. adenoviral infection

C. parainfluenza

D. rhinovirus infection

E all right

78. Indications for hospitalization of patients with influenza:

A difficult and complicated course of influenza

B. development of hemorrhagic syndrome

S. fever above 40 ° C

D. presence of meningeal syndrome

E. * all right

79. For the treatment of respiratory mycoplasmosis apply:

A. azithromycin *

B. ribavirin

C. acyclovir

D. lamivudine

E nystatin.

80. For the treatment of Legionnaires' disease are used:

A. ribarivin

B. interferon

C. ozeltimivir

D. * doxycycline

E all right

81. etiotrop treatment of psittacosis use:

A. azithromycin *

B penicillin V.

C. cefazolin

D Vitamin.

E. ambroksol

82. Which drug is used for treatment of influenza etiotrop:

A. * oseltamivir

B. ganciclovir

C. famciclovir

D. acyclovir

E. lamivudine

83. If viral-bacterial complications of influenza is effective to use:

A. Recombinant Interferon

B. Influenza gammaglobulin

C. antibiotics

D. detoxification therapy

E. * all right

84. For causal treatment using adenoviral infection:

A. * deoxyribonuclease

B. paracetamol

C. antibiotic

D. aspirin

E all right

85. Indications for prescribing antibiotics for the flu:

A. The presence of foci of chronic bacterial infection

B. very difficult for

C. the presence of complications

D. certain age groups (children, the elderly)

E. * all right

86. Assign the first aid at paraflu, complicated laringostenozom:

A. glucocorticoids

B. thermal procedures (mustard, hot water bottles at the feet, warm drink)

C. inhalation aerosol mixture antiedematous

D. sedatives

E. * all right

87. Patient G., 26 years old, fell ill acutely: T 39,5 ° C, severe headache, especially in the frontal and temporal areas, pain in muscles and joints. The skin is clean, scleritis, moderate hyperemia of the mucosa of the oropharynx. The drug of choice for treatment of this patient:

A. * oseltamivir

B. aspirin

C. ampicillin

D. cephalosporins

E. ribonuclease

88. For the symptomatic treatment of influenza is used all except:

A. * oseltamivir

B. antipyretics

C. vasoconstrictor drops

D. antihistamines

E. mucolytics

89. The routine prophylaxis of influenza is carried out:

A * vaccines

B. inducers of endogenous interferon

C. interferon

D. oseltamivir

E. rimantadine

90. For the purpose of the non-specific emergency prevention of influenza A is used:

A human interferon

B. rimantadine

C. interferon inducers

D. oxolinic ointment

E. * all right

91. With a view to planning specific prevention of influenza is used: A * vaccine

B. rimantadine

C. ascorbic acid

D. oxolinic ointment

E all right

92. For emergency prevention of influenza and avian flu (H5N1) is used:

A. Only a live vaccine

B. rimantadine

C vaccine "VAXIGRIP"

D. * oseltamivir

E all right

93. Which of these groups is not recommended to be vaccinated against the flu:

A. * Children up to 6 months

B health care workers

C. a person over 60 years

D. children with HIV infection

E. ill with diabetes

94. Select the category of persons to whom vaccination is shown in the first place:

* A person with chronic diseases of the cardiovascular, respiratory, renal, diabetes, immune deficiency of various origins

B. All persons older than 50 years

C. a person with 2 or 4 blood group

D. newborns

E. flu patient family members

95. The specific activity carried out immunoprophylaxis of influenza

A. * vaccine intranasally

B vitamins.

C. immunoglobulins

D. rimantadine

E. broad-spectrum antibiotics

96. The specific held passive immunoprophylaxis of influenza:

A live intranasal vaccine

B. * immunoglobulin

C. parenteral inactivated vaccine

D. broad-spectrum antibiotics

E. rimantadine

97. Statement Terms of SARS patients from the hospital:

A. no earlier than 3 days of normal temperature

B. after full clinical recovery

C. under normal results of blood and urine tests

D. no earlier than 5 days from the onset of the disease

E. * all right

98. What treatment is used in severe acute respiratory syndrome:

A. * antiviral therapy with ribavirin, broad-spectrum antibiotics, glyukokortikridy

B. Protected penicillins, detoxication therapy

C. 2 cephalosporins generation gepatoprotektory

D. generation fluoroquinolones 1

E. inducers of endogenous interferon, aminoglycosides

99. Clinical supervision for recover from the flu set for the term:

A. 2 weeks

* B. 1 month

C. 3 month

D. 6 months

E are not in the observation nuzhdayutsya

100. Clinical supervision for convalescents psittacosis set for the term:

A. 1 month

B. 3 months

C. 6 months

D. 1 year

E * 2 years

3.4.3. Complete a table: **α=3**

Differential diagnostics of influenza with other infectious diseases

Symptoms	Influenza	Typhus	Viral hepatitis A	Meningococcal meningitis	leptospirosis
Start of disease	sudden	gradual	sudden	sudden	sudden
Headache	Localized in the area of forehead	diffuse character	diffuse character	diffuse character	diffuse character
Intoxication	expressed	expressed	expressed	expressed	expressed
Color of skin	There is expressed hyperemia of face and upper part	Pallor of skin	Sclera jaundice	pallor	Hyperemia and puffiness of face, injection of sclera vessels, sometimes on

	of trunk, injection of sclera vessels				background of jaundice
Catarrhal syndrome	tracheitis, rhinisporidios	Phenomena of bronchitis	Absent, or the wretched catarrhal phenomena	Nazofaringitis tracheobronchitis	Sometimes phenomena of bronchitis
Myalgia	diffuse	absents	absents	absents	Expressed, mainly in gastrocnemius muscles, but can be diffuse
Dyspepsia disorders	absents	Flatulence, lock	There is nausea, vomiting, stomach-ache, weight in right sub costal area, diarrhea	absents	It is not (there can be pain in the muscles of stomach)
Rashes	absents	Roseoles	absents	absents, or in the case of meningococcal joining -	In the case of heavy flow - hemorrhagic

				hemorrhagic	
Hepatolienal syndrome	absents	present	present	absents	present
General blood analysis	Leucopenia with a relative lymphocytosis, normal ESR	Leucopenia, aneosinophilia, thrombocytopenia, ESR increased a bit	Moderate leucopenia, lymphomonocytosis	Neutrophilic leucocytosis, increase of ESR	Neutrophilic leucocytosis, lymphopenia, considerable increase of ESR

Differential diagnostics of SARS

Sing	Flu	Paraflu	Adenoviral disease	RS - infection	Rhinoviral disease
Beginning	Spontaneous, frequently with chill	Gradual, rarely acute	Gradual, rarely acute	More often acute, rarely gradual	Acute
guiding symptoms	Symptoms of intoxication	Catarrhal phenomena, laryngitis;	Exudative catarrhal phenomena	Affection of lower breathing tracts	sneezing, stuffiness in nose, rhinitis
General view	puffiness, face hyperemia, conjunctivitis	General	General, some times paleness, often	General, often paleness	General

			conjunctivitis		
Intoxication	Guiding symptom	Absent	Weak	Weak or mild	Absent
Catarrhal phenomena	stuffiness in nose, dischargings from 2—3 day	Evident, with gradual inclusion of parts of respiratory tract	Evident, with gradual inclusion of parts of respiratory tract	Evident	Evident rhinitis
Head-ache	Strong, in the front part	Weak or absent	Moderate	Weak or absent	Weak or absent
Pain:					
In eyes	Present	Absent	Absent	rare, weak	Absent
In muscles	»	rare, weak	rare, weak	moderate	»
Flabbiness, adynamia	Typical	Weak	Weak or absent	»	»
Fever	High form the first day	low grade fever	High, prolonged	Moderate	Absent or low grade
Rhinitis	Moderate	Moderate or evident	Moderate or evident	Evident	Guiding symptom
Cough	Dry	Dry, sharp	Rare	Guiding symptom	Rare
Giddiness, syncope	May occur	No	No	No	No
Vomiting, nausea	May occur	May occur	Rare	May occur	May occur

Affection of pharynx	High hyperemia	Weak hyperemia	High hyperemia, tonsil turgidity	Weak hyperemia	Very weak hyperemia
Affection of mucosa of pharynx	High hyperemia , edema	Moderate hyperemia	Moderate or high hyperemia with edema	Moderate hyperemia	Evident rhinitis
Affection of respiratory tracts	rhinopharyngotracheitis, rhinopharyngolaryngitis, rhinopharyngitis	rhinopharyngolaryngitis	rhinopharyngotonsilitis, rhinopharyngoconjunctivitis	Bronchitis, bronchitis + pharyngitis, Bronchitis+ rhinopharyngitis	Rhinitis
Lymphadenitis	No	No	Often	May be	No
Liver enlargement	»	»	May be	May be	»
Diarrhea	»	»	May be	No	»
Rash	»	»	» »	»	»

3.4.4. Self-control tasks

Task 1 α=3

A 67 years old patient delivered in infectious department with the heavy shortness of breath, bubbling breathing, cyanosis, surplus foamy sputum with the admixtures of blood. According to relatives a disease begun one day ago with a fever up to 390C,

insignificant shortness of breath, cough. It is known from anamnesis of life, that a patient carried the heart attack 10 years ago, but a shortness of breath was not to the nowadays disease. Objectively: a patient in heavy condition, skin is pale, blood pressure – 80/50, pulse – 120 in a minute, respiratory rate – 30 in a minute.

1. Formulate a preliminary diagnosis.
2. Inspection plan
3. Treatment.

Task 2 α=3

A patient delivered to the doctor on the 3rd day of illness. Felt ill suddenly. Illness has begun with a fever up to 39^0C, chill, headache in the forehead, superciliary arcs, dull ache in a body. On a 2nd day a dry cough appeared with irritation after breastbone, heavy breathing by nose. During examination: temperature $38,5^0$C, languid answers on questions, hyperemia of face and upper half of trunk, injection of sclera vessels, hyperemia grittiness and dryness of mucous membrane of pharynx, blood pressure 100/60, pulse 90 in 1 min., breath 20 in 1 min.

1. Formulate a preliminary diagnosis.
2. Inspection plan
3. Treatment.

Task 3 α=3

Patient, 28 years felt ill suddenly. Illness was begun with a chill, pain in the back, muscles, headache in a forehead, eyes. A temperature rose to 39 ^{0}C. A dry, black-breaking cough appeared on the second day of illness, heavy breathing by nose. There are a temperature of 39, 2 ^{0}C during examination, a person is bloodshot, edematous, injection of sclera vessels, expressive hyperemia of pharynx. Heart tones deaf, pulse 100, in lungs vesicular breathing

1. Formulate a preliminary diagnosis.

2. Inspection plan

3. Treatment.

Task 4 α=3

A 67 years old patient delivered in infectious department with the heavy shortness of breath, bubbling breathing, cyanosis, surplus foamy sputum with the admixtures of blood. According to relatives a disease begun one day ago with a fever up to 390C, insignificant shortness of breath, cough. It is known from anamnesis of life, that a patient carried the heart attack 10 years ago, but a shortness of breath was not to the nowadays disease. Objectively: a patient in heavy condition, skin is pale, blood pressure – 80/50, pulse – 120 in a minute, respiratory rate – 30 in a minute.

1. Formulate a preliminary diagnosis.
2. Inspection plan
3. Treatment.

4. Materials for class self- training.

4.1. List of practical tasks for class self-training

- to master a patient with flu examination technique
- to carry out patient with flu bedside work;
- to conduct differential diagnostics of flu;
- to make a plan of laboratory inspection;
- to interpret the results of additional inspection;
- to recognize possible complications of flu;
- to create a individual plan of flu patient treatment;
- to define medical tactics in cases of urgency;
- to design a medical document in fact of “flu” diagnosis establishment;

4.2. Professional algorithm devoted to skills and abilities

of influenza diagnostics forming.

№	Task	Sequence of execution	Remarks and warnings in relation to self-control
1.	To capture the method of clinical inspection of patient with influenza	I. To ask complaints of patient.	To separate complaints which characterize syndromes: - intoxication - catarrhal
		II. To find out anamnesis: 1. Case history	To pay attention on severe beginning; term, sequence of origin, dynamics - fevers; - localization of headache; - catarrhal syndrome (to select the syndromes of tracheitis, rhinisporidios) - other symptoms
2.	To provide care after patient		To discover illnesses are carried and to define the presence of chronic cardio-vascular, respiratory systems diseases, kidney pathology, diabetes, immunodeficit.
		2. Past history	To find out information in relation to realization of air-tiny mechanism of transmission, to pay attention to epidemic situation in relation to a flu presently in town, stay of sick in places accumulation of people, age, line of business of patient.
		3. Epidemiological history	To remember: a presence, expressed, dynamics of symptoms predefined a term and

			weight of flow of illness, depend on age of patient, concomitant pathology.
		II. To exanimate patient.	To pay attention on: - languor, adynamics of patient; - temperature of body; - hyperemia of face and upper half of trunk; - dryness, grittiness and bright hyperemia of pharynx mucous membrane
		1. General review: - general patient condition;	To pay attention on: - temperature of body (a low temperature can testify to ITSH development) - expressed of intoxication syndrome; - localization of headache
		- skin, mucous membrane of pharynx;	- neurological symptoms in the case of the complicated motion, delirium, hallucinations, fainting fit
		1. Nervous system	To pay attention on: - local inflammatory changes on different levels: - rhinisporidios - in an initial period wretched excretions, then dryness of mucous membranes with difficulty of the nasal breathing, dryness and grittiness of mucous membrane of pharynx - laryngitis is a barking dry cough - a tracheitis with frequent dry cough which is accompanied with irritation after a breastbone
		2. Respiratory system -	- bronchitis, pneumonia with a dry cough,

		3. Cardio vascular system: - pulse; - heart tones;	shortness of breath To pay attention on: - tachycardia, or bradicardia (tachycardia testifies complication!); - increase and decline blood pressure up to a collapse;
3.	To appoint laboratory and additional researches, interpret results.	1. Total blood count 2. General urine analysis. 3. EKG and ULTRASONIC of heart 4. X-ray 5. Serum methods: - RFA - RSK, RGGA	To pay a regard to typical changes: leucopenia with a relative lymphocytosis. To pay attention: - on height of fever can be determined insignificant proteinuria, microhematuria as a result of toxics and circulator disorders. - in the case of presence of heavy flow of flu, serious violations of rhythm and conductivity at patients with cardio-vascular pathology - at presence of heavy flow, shortness of breath and high fever more than 5 days - it is needed not least 5 cages of cylindrical epithelium with the fluorescent including in analyses - have a retrospective value

4.3 Professional algorithm of forming of skills and abilities of diagnostics of acute respiratory viral infections

#	Task	Sequence of implementation	Remark, warning to self-control
1.	To master the method of clinical inspection of patient with flu	I. To find out the complaints of patient.	To separate complaints which characterize syndromes: - general intoxication - catarrhal
		II. To find out anamnesis:	To pay attention on beginning of illness; term, sequence of origin, dynamics of development
	To conduct a patient	1. Anamnesis of illness	
2.		2. Anamnesis of life	To find out the carried diseases and find out the presence of chronic diseases of cardiovascular, respiratory systems, kidneys, diabetes mellitus, immunodeficiency.
		3. Epidemiological anamnesis	To find out information about realization of droplet and fecal-oral (for the adenoviral infection) mechanism of transmission, to pay attention to epidemic situation about SARS presently in town, patient staying in places of people accumulation, age, line of business of patient.
		II. To conduct an objective examination.	To remember: a presence, expressed, dynamics of symptoms which is

		1. General review: - general state of patient; - skin, mucus oropharynx;	predefined by term and weight of flow of disease, depend on age of patient, concomitant pathology. To pay attention on: insignificant toxicosis in parainfluenza, absence of intoxication syndrome(in most cases) in rhinoviral diseases, presence of more expressed intoxication in patients with RS-infection Pale hyperemia of handles and soft palate - at a parainfluenza,
		2. Respiratory system	presence of granulose pharyngitis, rhinitis with the expressed exsudate component, unsharp local hyperemia, lymphadenopathy, conjunctivitis(follicle pellicle) quite often one-sided - in adenoviral infection Cold, dry barking cough, croup in children, expiratory dyspnea – in parainfluenza Presence of excessive serosal or seromucous nasal secretion – in rhinoviral infection Combination of rhinorrhea with

		3. Nervous system 4. Gastric system	the lower respiratory tracts affection in children, upper respiratory tracts for adults, whistling breathing, dyspnea of expiration type during bronchial affection, hyposthenic or hard breathing on separate areas, alternation of emphysematous areas and areas of dulling during percussion – RS-infection Symptoms of rhinitis, pharyngitis, to tonsillitis, tracheobronchitis – in adenoviral infection Mild general intoxication Mild diarrhea and pain in epigastrical area, hepatolienal syndrome – in adenoviral infection
3.	To appoint laboratory and additional researches, interpret results.	1. General blood analysis. 2. General urine analysis. 3. Ro 4. Express diagnostic	Hemogram has no essential changes, just increased ESR in adenoviral infection No changes Is prescribed when some complications present IFR, IFA – antigen detection in touch smear of oropharynx

		5. Virological method 6. Serological methods	Virus detection in oropharynx Are prescribed in twin serum with 10 days interval, increasing of antibody titer not less then 4 times.

5. Materials for afterclass stand-alone work

The topics of students stand-alone work

1). Acute respiratory distress-syndrome

2). The treatment of ventilatory insufficiency

3). The treatment of brain edema

MENINGOCOCCAL INFECTION

Actuality of theme

Meningococcal infection as sporadic cases or small epidemic outbreaks is registered in all countries of the world. Morbidity remains the greatest on the African continent, the diseases appeared there as “meningococcal belt”. In 80% cases meningitis has meningococcal etiology.

Meningococcal infection affected mainly children and young people. The high degree of contiguousness results in epidemics an outbreak that in turn leads to great economic expenses.

Nowadays Meningococcal infection remains not fully controlled, as vaccines are created not against all groups of meningococci.

Questions of pathogenesis are not enough studied, in particular reasons of forming of fulminant and chronic forms

Meningococcal infection generalized forms have severe cases, with high mortality. Among all cases of meningococcemia 10-20% is classified as fulminant, accompanied by 80-100% mortality.

Consequently, Meningococcal infection topicality is determined by wide spread, all of age groups of population involving, heavy process, development of emergency conditions leading to disability, and in a number of cases to mortality. The doctor should have knowledge of early diagnostics and management of patient’s on the pre-hospital stage and in hospital.

2. Study purpose of practical studies:

2.1. The student should have an understanding of: ***a-1***

- Meningococcal infection place in the structure of infectious diseases, history of research, scientific contribution of domestic and foreign scientists in the history of research in this area.

2.1.1. The student must learn: ***a-1***

- With statistics on the prevalence of Meningococcal infection, mortality, frequency of complications, bacteria carrying in the world today.

2.1.2. Students have to know: ***a-2***

- Meningococcal infection etiology, factors of pathogenicity.
- epidemiology of Meningococcal infection, peculiarities of modern epidemiological process;
- pathogenesis of Meningococcal infection;
- classification of Meningococcal infection;
- basic manifestations of Meningococcal infection different clinical forms
- pathogenesis, terms of originating and clinical manifestations of Meningococcal infection;
- Meningococcal infection laboratory diagnostic;
- principles of treatment;
- principles of prophylaxis;
- management of patients' treatment in the case of emergency states (infectious-toxic shock, brain edema, acute adrenal failure, acute kidney failure, DIC-syndrome ;
- Meningococcal infection prognosis;
- rules of discharging from the hospital;
- rules of the dispensary system.

2.2. Students have to be able: ***a-3***

- to keep the basic sanitary antiepidemic rules working with Meningococcal infection patient;
- to take the medical history with the estimation of epidemiological data;
- to examine a patient and find out basic symptoms and syndromes of Meningococcal infection, to make the substantiation of presumptive diagnosis;

- to carry out differential diagnostics of Meningococcal infection with diseases which have similar clinical manifestations
- to recognize possible complications of Meningococcal infection, urgent states on the basis of clinical examination in good time
- to draw up medical documents as far as the establishment of preliminary diagnosis “meningococcal infection” is concerned;
- to work out a plan of laboratory and additional examination of patient;
- to make interpretation the results of laboratory investigation, including specific methods of diagnostics;
- to work out an individual plan of treatment taking into account epidemiological data, clinical form of illness, severity of process, presence of complications, allergy in history, concomitant pathology;
- to manage the first aid on the pre-hospital stage in the case of emergency states;
- to workout a plan of antiepidemic and preventive measures in the focus of infection;
- to give recommendations concerning the regimen, diet, supervision to convalescents.

2.3. Creative level (for the most talented students): ***a-4***

- develop creative abilities of students in the course of clinical trials, analysis of scientific sources;
- involve students to work in student scientific circle of the department;
- suggest topics for presentations at scientific conferences on the most pressing issues, such as "Current approaches to the treatment of generalized forms of meningococcal disease."

3. Educational goals (goals of personal development):

• learn the skills and ethics of medical ethics in relation to the patient and his family;

• develop understanding of the impact of social and hygienic factors on the incidence of meningococcal disease;

• material on topics to develop a sense of responsibility for the timeliness and accuracy of professional activities.

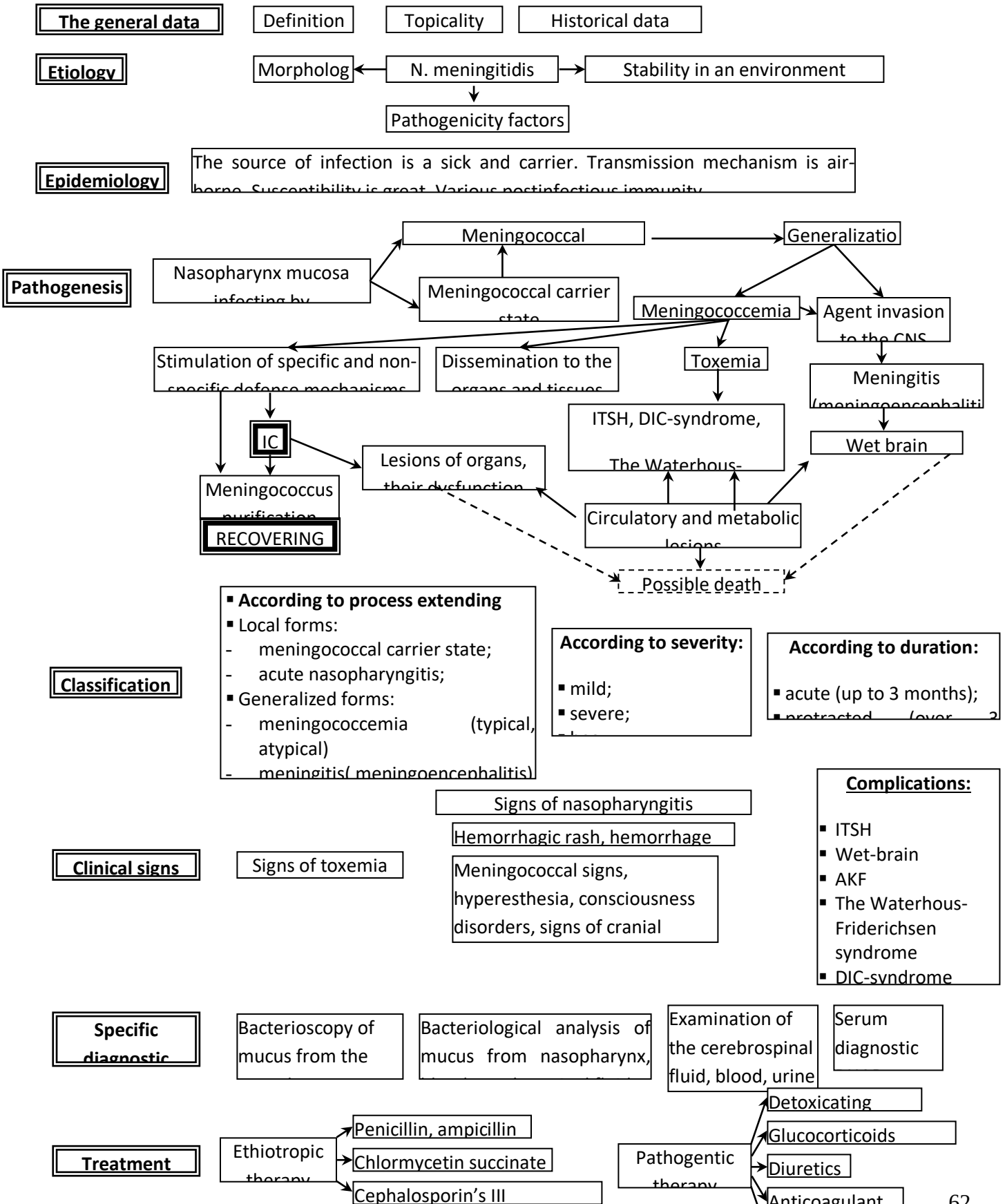
4.1. Interdisciplinary integration.

Subject	To know	To be able to
Previous subjects		
Microbiology	Properties of Neisseria meningitidis (N. meningitidis.); methods of Meningococcal infection specific diagnostics	To interpret the results of specific methods of Meningococcal infection diagnostics.
Anatomy and Physiology	Parameters of physiological norm of human organs and systems; standard laboratory examination indexes (total blood count, clinical urine analysis, biochemical blood analysis, parameters of AOS, electrolytes etc).	To estimate the laboratory examinations data.
Pathological Physiology	Mechanism of organs and systems dysfunction with pathological conditions of different genesis.	To interpretate pathological changes as a result of laboratory examination of organs and systems dysfunction different genesis.
Immunology and Allergology	Basic terms of subject, role of immunity system in an infectious process, influence on the elimination term of agent from the human organism. Immunology aspects of N. meningitidis bacterial carrying.	To estimate information of Immunological researches.
Epidemiolo	Epidemical process (source,	To estimate the data of

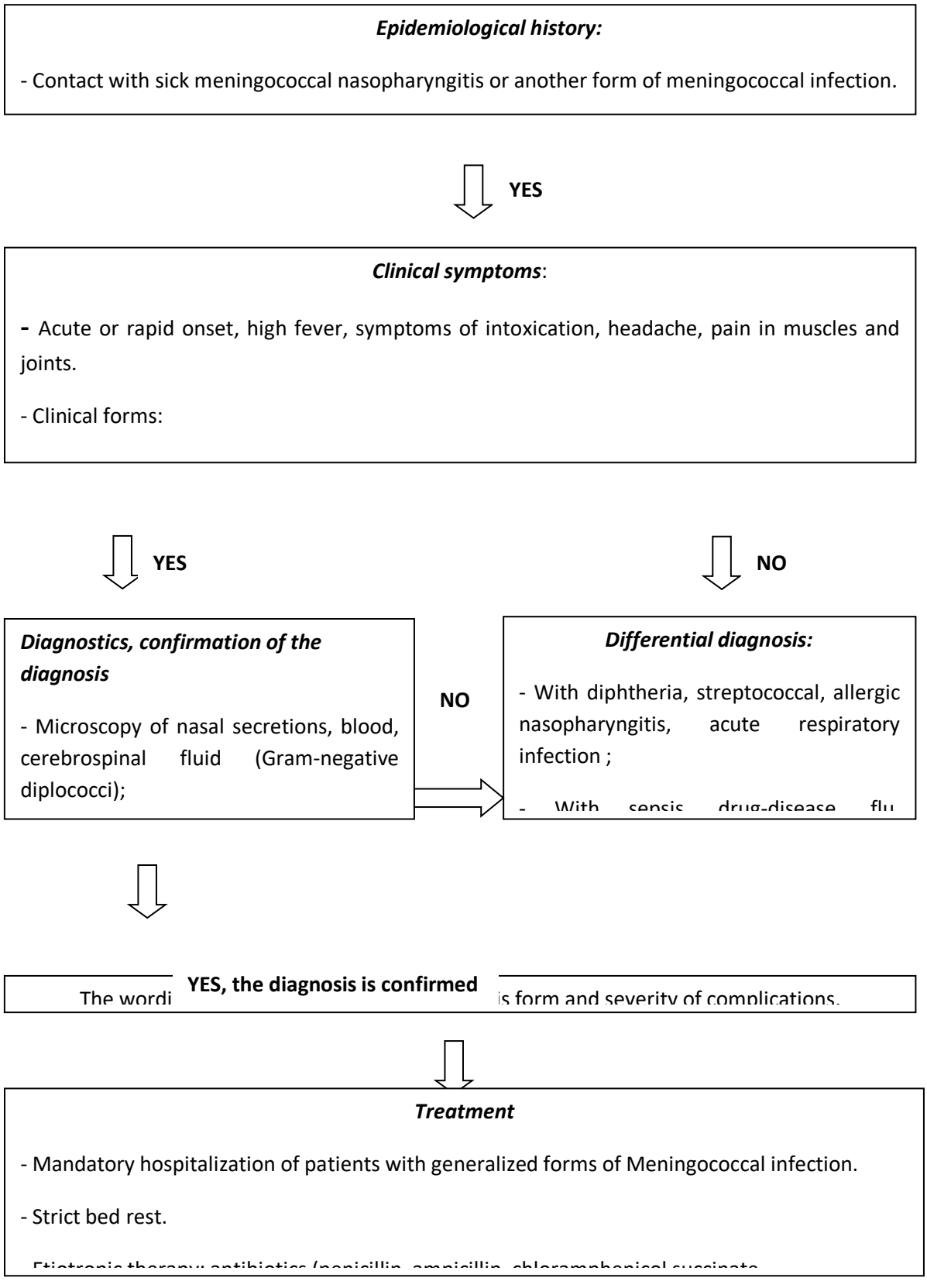
gy	mechanism of infection, ways of transmission), prevalence of meningococcal infection in Ukraine and in the world.	immunological investigations.
Neurology	Pathogenesis, clinical signs of vegetative and peripheral nervous systems lesions on Meningococcal infection.	To examine the patient with the nervous system lesions
Dermatology	Pathogenesis, clinical description of exanthema	To recognize a rash in Meningococcal infection patient
Internal Medicine	Methods and basic stages of patient's clinical examination.	To take the history, to examine the patient, find out pathological symptoms and syndromes. To analyze findings.
Clinical Pharmacology	Pharmacokinetics and pharmacodynamics, side effects of penicillin, ampicillin, cefotaxime, ceftriaxone, means of pathogenic therapy.	To prescribe treatment depending on age, individual peculiarities of patient, to choose the optimum mode of drugs administrations and dose age, give prescriptions.
Intensive Care	Emergency states: Infectious-toxic shock Brain edema Acute adrenal failure Acute kidney failure DIC-syndrome	manage the first aid in such emergency states: Infectious-toxic shock Brain edema Acute adrenal failure Acute kidney failure DIC-syndrome

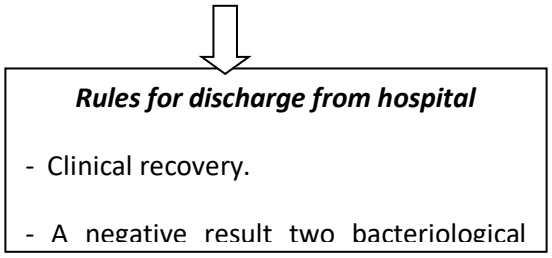
Following subjects		
General practice	Pathogenesis, epidemiology, classification, clinical manifestations and their dynamics, complications, laboratory diagnostics of Meningococcal infection.	To carry out differential diagnostics of different genesis diseases with Meningococcal infection. To diagnose Meningococcal infection, its complications, to interpretate the data of laboratory examinations. To hospitalize a patient in time. To manage help in the case of emergency on the pre-hospital stage.
Intra-subject integration		
Infectious diseases.	Peculiarities of infectious diseases. Principles of diagnostics, treatment, prophylaxis of infectious diseases. Pathogenesis, epidemiology, dynamics of clinical manifestations, laboratory diagnostics, treatment and prophylaxis of Meningococcal infection, its complications.	To carry out differential diagnostics of Meningococcal infection with other infectious diseases. To diagnose Meningococcal infection, its complications; to interpretate the data of laboratory investigations..

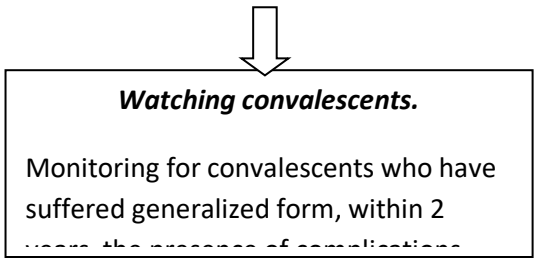
4.2. Theme contents



4.3. Algorithm for the diagnosis and treatment of Meningococcal infection







5. Materials methodological support classes.

5.1. Materials for the preparatory phase control classes.

5.1.1. Questions to be answered

1. What scientists described the clinic of the diseases in details?
2. When and whom was the Meningococcal infection agent discovered by?
3. State of meningococcal disease morbidity in Ukraine and in the world?
4. What is the agent of meningococcal disease? Describe its morphological features factors of pathogenicity.
5. Specify agent's stability to the action of environmental factors.
6. Describe the source of infection; name the mechanism of getting infection.
7. Pathogenesis of meningococcal disease.
8. Classification of meningococcal disease clinical forms
9. Basic clinical manifestations of meningococcal nasopharyngitis
10. Basic clinical manifestations of meningococcemia.
11. Complications of meningococcemia.
12. Basic clinical manifestations of meningococcal meningitis and meningoencephalitis.
13. Complications of meningitis and meningoencephalitis.
14. Principal reasons of mortality from generalized forms of meningococcal disease.
15. Plan of meningococcal disease patient examination.
16. Methods of meningococcal disease specific diagnostics. Interpretation of examination results.

17. Etiological treatment of different forms of meningococcal disease drugs: doses, ways of administration duration of treatment.

18. Sanitation of meningococcus carriers'.

19. Pathogenic treatment generalized forms of meningococcal infection

20. Discharging from the hospital.

5.1.2. Control test. Choose right answers:

1. Patient 20 years old, became ill suddenly: temperature up to 40 °C, screams sharp headache, motor excitation, frequent vomiting. There hemorrhagic rash irregular shapes of various sizes, usually in the form of stars, mostly on the buttocks, thighs, legs, on the trunk. Meningeal signs are positive. What is the most reliable diagnosis in the patient?

A. Measles;

B. Influenza with hemorrhagic syndrome;

C. Encephalitis;

D. Meningococcal infection;

E. Leptospirosis.

2. The drug of choice for the treatment of brain edema is dexamethasone. This is due to:

A. The high bioavailability of the drug;

B. The high activity of the drug;

C. The ability to cumulation in the cerebrospinal fluid;

D. The lack of mineralocorticoid activity;

E. Deceleration half-life.

3. Diagnosed with "meningitis" in the hospital delivered a patient 20 years, soporous state. Worried headache, persistent vomiting, which does not give relief. No focal neurological symptoms, meningeal signs are positive, a temperature of 39°C. The skin has a rash located on the abdomen, thighs and buttocks. What rash occurs in this disease?

A. Allergic;

B. Hemorrhagic with necrosis in the center;

S. Roseolas;

D. Vesicular;

E. Papular with the tendency to merge.

4. For the pathogenic treatment of brain edema must all except:

A. Glucocorticoids;

B. Diuretic;

C. Antibiotics;

D. Oxygen therapy;

E. Albumin, plasma.

5. The patient, who had been in contact with sick meningococcal infection were headache, sore throat, dry cough, nasal congestion and mucus. T-37,4°C, the hyperemia and swelling of the posterior pharyngeal wall, which is accompanied by hyperplasia of lymphoid follicles. Diagnosis?

A. Meningococcal nasopharyngitis.

B. Diphtheria throat.

C. Bacterial tonsillitis

D. Influenza.

E. Adenovirus infection.

6. All refers to the meningeal symptoms except:

A. Kernig`s symptom;

B. Brudzinsky`s symptom;

C. Rigidity of occipital muscles;

D. Pyramidal sings;

E. Lasegue symptom.

7. A young man of 18 years was ill acutely, the body temperature of 41°C, chills, headache, weakness, cyanosis of the face, extremities. On the skin of the body after 10

hours there was a hemorrhagic rash of irregular shape, with clear contours, star on the buttocks, back of thighs, eyelids, phalanxes of hands. Diagnosis?

A. Epidemic typhus;

B. Meningococcal meningitis.

C. Measles.

D. Meningococcemia.

E. Typhoid fever.

8. What is the basis differential diagnosis of meningitis and meningism:

A. Research of cerebrospinal fluid;

B. Expression of meningeal symptoms;

S. Severity of headache;

D. Manifestations of intoxication;

E. Availability of repeated cerebral vomiting.

9. Patient 25 years have hyperthermia, severe headache; expander character is enhanced by changing the position of the body, in bright light, sharp sound. Vomiting occurs suddenly without nausea, fountain and does not give relief. In bacteriology CSF isolated Neisseria meningitidis. What diagnosis?

A. Meningococcal meningitis;

B. Tuberculous meningitis;

S. Meningococcemia;

D. Ischemic stroke;

E. Viral encephalitis.

10. In normal cerebrospinal fluid absent:

A. Chloride.

B. Lymphocytes

C. Protein

D. Glucose

E. Neutrophils.

11. The patient was 22 years old became ill with acute fever to 41°C, headache and general weakness. On examination, it marked cyanosis of the face, extremities. On the skin of the back, rear thighs after 18 hours there was a starry hemorrhagic rash with a clear outline, with necrosis in the center. Diagnosis:

A. Epidemic typhus;

B. Meningococcemia;

C. Measles;

D. Meningococcal meningitis.

E. Typhoid fever.

12. The most important clinical symptom of cerebral edema is:

A. Clonic-tonic cramps;

B. Pathological pyramidal signs

C. Coma

D. Violation of breath

E. All of the above symptoms

13. The patient of 60 years, have the temperature 38.5°C, headache, vomiting. The meningeal signs were positive. In the researching of CSF: cell count - 7000 cells (78% lymphocytes). Probable diagnosis:

A. Brain tumor;

B. Purulent meningitis;

C. Tuberculous meningitis;

D. Viral meningitis;

E. Meningism.

14. In order to differentiate meningitis and meningism needs:

A Virological examination of cerebrospinal fluid;

B. Complete blood count;

C. Bacterioscopy of cerebrospinal fluid;

D. Bacteriological examination of cerebrospinal fluid.

E. The total cerebrospinal fluid analysis

15. Farmer acutely ill: the temperature 39°C, severe headache, repeated vomiting. Objectively: a serious condition, agitation, stiffness in the neck muscles. Symptoms of Kernig and Brudzinsky were positive, general hyperesthesia. What should be done to confirm the diagnosis in the first place?

A. Echoencephalography;

B. Complete blood count and blood cultures for sterility;

C. Computer tomography of brain;

D. X-ray of the skull in two projections;

E. Lumbar puncture and a general analysis of the cerebrospinal fluid.

16. The meningism to meningitis differs:

A The absence of neutrophil cytosis;

B. Increase the protein levels in the cerebrospinal fluid;

C. The normal level of glucose in the cerebrospinal fluid;

D. The absence of changes in the cerebrospinal fluid;

E. The absence of lymphocytic cytosis.

17. The patient became ill with acute increase body temperature up to 40°C. On the limbs appeared hemorrhagic rash. Pulse - 132/min, BH - 28/min, blood pressure - 110/60 mm Hg. After 2 hours, the state has deteriorated sharply - consciousness disturbed, has fallen sharply temperature and blood pressure. Identify the main complication of the disease.

A Hemorrhagic stroke;

B. Acute heart failure;

C. Acute respiratory failure;

D. Infectious-toxic shock;

E. Cerebral insufficiency.

18. For the differential diagnosis of meningococcal and caused by Haemophilus influenzae (Hib) meningitis should:

A. Epidemiological anamnesis;

B. Biochemical examination of cerebrospinal fluid;

S. Virological examination of cerebrospinal fluid;

D. Bacterioscopic examination of cerebrospinal fluid

E. Bacteriological examination of cerebrospinal fluid.

19. The patient was 18 years old, was admitted to the hospital on the 6-th day of illness. The disease began with the appearance of a cold and cough. Temperature 37,7°C. On the 5-th day of illness suddenly increased the temperature up to 40°C. Condition worsened: there lethargy, severe headache, frequent vomiting, not connected with food. Overall condition is very serious, disturbed consciousness, dilated pupils, there is no reaction to light. Meningeal symptoms were positive. General hyperesthesia, tachycardia, blood pressure - 100/50 mm Hg. What is the most likely diagnosis?

A. Enterovirus infection;

B. Adenovirus infection;

C. Infectious mononucleosis;

D. Meningococcal meningitis;

E. Ornithosis.

20. For the differential diagnosis of meningococcal and pneumococcal meningitis should:

A Bacteriological examination of cerebrospinal fluid;

B. Biochemical examination of cerebrospinal fluid;

S. Virological examination of cerebrospinal fluid;

D. Epidemiological anamnesis;

E. Bacterioscopy examination of cerebrospinal fluid.

21. The patient 27 years during the last 3 days complained of a runny nose and a pain in throat. After super cooling state has deteriorated sharply: the sudden chills, temperature up to 40°C and headache. On the skin of the lower limbs, trunk and buttocks different

sizes and irregularly shaped hemorrhagic rash with cyanotic shade. Consciousness is preserved. Meningeal signs are absent. What the preliminary diagnosis?

A. Leptospirosis;

B. Influenza;

C. Epidemic typhus;

D. Hemorrhagic fever;

E. Meningococcal infection. Meningococcemia.

22. For the treatment of meningococcal meningitis all antibiotics used, except

A. Ampicillin;

B. Ceftriaxone;

C. Penicillin;

D. Cefazolin;

E. Chloramphenicol succinate.

23. Patient 27 years old, hospitalized for 2 days of illness with complaints of severe headache, repeated vomiting. Objectively: temperature 37°C, pulse 120/min, blood pressure 80/50 mm Hg. Adynamic. The bed takes a forced situation with his head thrown back. On the skin of the lower extremities, buttocks, trunk appearance multiple hemorrhagic ruch with necrosis in the center. Meningeal sings was positive. What caused the decrease in blood pressure?

A. Brain edema;

B. DIC;

C. Acute respiratory failure;

D. Dehydration;

E. Infectious-toxic shock.

24. Urgent care in generalized forms of meningococcal disease in the prehospital phase is immediate intravenous administration:

A. Glucocorticoids

B. Antibiotics;

S. antipyretic;

D. Anticoagulants;

E. Diuretic.

25. The patient receives meningococcal meningitis penicillin for 7 days. With 4 days the body temperature normal and meningeal signs are absent. When can I cancel an antibiotic?

A. When in the cerebrospinal fluid cell count of 100 or less, dominated by neutrophils;

B. In the absence of leukocytosis and stab shift in blood;

C. In cell count in the cerebrospinal fluid of 100 or less, dominated by lymphocytes;

D. When the cell count in the cerebrospinal fluid of 150 dominated, lymphocytes;

E. After normalization of temperature.

26. Clinical signs of meningitis are all, except:

A. Hemorrhagic rash;

B. High intoxication;

C. Repeated vomiting;

D. Headache;

E. Meningeal symptoms.

27. Which groups of microorganisms include the causative agent of meningococcal infection?

A. Bacteria;

B. Viruses;

C. Mushrooms;

D. Rickettsia;

E. Protozoa.

28. Biochemical signs of purulent meningitis are all indicators, except:

A. Decrease in the chloride content in the cerebrospinal fluid;

B. Increase the protein content in the cerebrospinal fluid;

C. Positive reaction Pandey;

D. Reduction of glucose in the cerebrospinal fluid;

E. Neutrophil cytosis.

29. The causative agent of meningococcal infection can be isolated from all types of biological material, except:

A. Faeces;

B. Mucus from the nose and throat;

C. Blood;

D. Cerebrospinal fluid;

E. Elements of the rash.

30. Meningococcal infection characterized by changes in the peripheral blood, except:

A. Neutrocytosis;

B. Lymphocytosis;

C. Shift left leykoformuly;

D. Leukocytosis;

E. Moderate ESR.

Keys:

1	D	11	B	21	E
2	D	12	C	22	D
3	B	13	B	23	E
4	C	14	E	24	A
5	A	15	E	25	C
6	D	16	D	26	A
7	D	17	D	27	A
8	A	18	E	28	A
9	A	19	D	29	A
10	E	20	A	30	B

5.1.3. Self-control task. α=3

Task 1.

Patient 32 years old, complains of malaise, sore throat, headache, and weakness. Sick third day, these days the temperature is kept within the 37,8°C. Objectively: general condition is satisfactory. Pale skin, rash is absent. Conjunctivitis, scleritis. Severe hyperemia of the mucous posterior pharyngeal wall with purulent "tracks." Palpable moderately painful submandibular lymph nodes. From the internal organs pathology is not revealed.

1. The preliminary diagnosis.
2. Plan of examination.
3. Treatment.

Task 2.

Patient 21 years, the disease began to increase in body temperature to 39.0°C, headache, chills, repeated vomiting. Objective: body temperature 39.3°C, pulse 76 beats per minute. Meningeal signs are positive. CSF analysis: cloudy liquid, flows under high pressure, cytosis 1237 in 1 mcl. (84% neutrophils, 16% lymphocytes), Pandey reaction is ++, protein 0.66 g/L. Bacterioscopy of the cerebrospinal fluid revealed gram-negative cocci, which are located intracellularly.

1. The preliminary diagnosis.
2. Plan of examination.
3. Treatment.

Task 3.

Patient 30 years old, hospitalized in the clinic on the second day of the disease. Disease began acutely with increase temperature to 40°C. Patients concerned about sudden headache, vomiting, photophobia. The general condition of heavy, confused consciousness. The skin is pale. On the skin of the abdomen, buttocks and lower extremities stellate hemorrhagic rash. Meningeal signs are positive. When lumbar

puncture obtained turbid liquid with a high neutrophil cytosis - 47200 in 1 mcl, protein - 2.64 g / l, Pandey reaction is ++++.

1. The preliminary diagnosis.
2. Plan of examination.
3. Treatment.

Task 4.

Patient P., 23 years old, has been admitted to the hospital in 19 hours after the disease starts. He felt ill acutely, the body temperature rose up to 40,2ºC at first. At the same time sharp headache and haemorrhagic rash on face, trunk, extremities appeared. At the moment of hospitalization the patient was unconscious, meningeal syndrome was marked, profose hemorrhages in to conjunctiva and scleras. Total blood count: erythrocytes – $4,5 \cdot 10^{12/}$ l, eosinophils– 0%, stab/band neutrophils – 23%, segmented neutrophils – 63%, monocytes – 6%, lymphocytes – 10%, leukocytes – $12,5 \cdot 10^{9}$ trombocytes – $150 \cdot 10^{9/}$ l, ESR – 42 mm/h. Liquor analysis: neutrophilic pleocytosis, that is beyond count, albumin is 1,87 gr/L, Pandy reaction is ++++. On a background of the therapy used the state of patient became worse, haemorrhagic syndrome increased, the blood admixtures in sputum, symptom of “bloody tears”, as well as bleeding from the injection places appeared. Blood pressure decreased to 60 mm/Hg. The patient has died in 29 hours after the disease onset.

1. The preliminary diagnosis.
2. Plan of examination.
3. Treatment.

Task 5.

Patient 20 years old, hospitalized in the hospital on the third day of illness. Ill two days ago by a viral infection, which was manifested nasopharyngitis. One day there was a headache, vomiting, fever up to 40°C. Objectively: the patient in a serious condition. On the skin appeared hemorrhagic rash with indistinct contours, which covers the entire body. Meningeal symptoms were positive, tachycardia and tachypnea. In the

last hours has deteriorated, there was a fountain vomiting, intense headache, pupils contracted, bradypnea, bradycardia.

1. The preliminary diagnosis.
2. Plan of examination.
3. Treatment.

6. Materialsfor class self- training.

6.1. Professional algorithm in relation to forming of skills and abilities of diagnostics Meningococcal infection.

№	Task	Sequence of carrying-out	Comment
1.	To study the method of meningococcal infection patient clinical examination	I. To ask for patient complaints.	To separate complaints which characterize syndromes: - general intoxication; - general cerebral; - meningeal; - nasopharynxs lesions; - other organ lesions.
2.	To carry out the patient's examination	II To take: 1.The case history	To pay attention to acute start; terms, sequence of occurrence, dynamics of: - fever; - headache; - vomiting; - rash; - sore throat; - hoarseness;

			- difficulty of the nasal breathing and discharge; - weaknesses; - other symptoms.
		2. The life history	To find out previous diseases.
		3.The epidemiological history	To find out the possible source of infection and ways of infecting, pay attention to patient's stay in high risk of infection regions.
		III. To carry out the physical examination of the patient.	To remember: the presence and dynamics of symptoms, how they are marked and caused by clinical form of the disease, weight of motion and character of complications, concomitant diseases and second infection.
		1.General examination: - generalcondition of patient; - skin;	To pay attention to: - weakness; - the body temperature; - pallor of skin (possible acrocyanosis, cyanosis); - hemorrhagic rash from petechiaeecchymosis on distal zones skin (hands, forearms, feet, shins, buttocks), appearing during first 5-15 hours of disease);
		- faucial mucosa;	- hyperemia of pharynx back wall mucosa with follicles hypertrophy,

		- lymph nodes; 2. Respiratory system. 3.Cardiovascular system: - pulse; - blood pressure; - heart percussion; - heart auscultation; 4. Digestive system: - abdominal palpation. 5. Nervous system.	pussy “path”; - submandibular lymph nodes are slightly enlarged and painful. No changes at typical Meningococcal infection process or signs of meningococcal pneumonia. In case of acute disease and meningococcal myocarditis, pericarditis development : - tachycardia; - blood pressure decrease; - dilation of heart borders; - heart sounds dullness, arrhythmia, noise of pericardium friction. No changes at typical Meningococcal infection process. Liver is slightly enlarged at severe process. Signs of general cerebral and meningeal syndromes focus symptoms and cranial nerves lesions.
3	To prescribe laboratory and additional examinations,	1. Total blood count.	To pay attention to changes: moderate (in the case of severity – marked) neutrocytosis with the deviation of the formula to the left

	interpretation results	2. Clinical urine analysis. 3. Biochemical methods of examination. 4. Bacterioscopy of nasopharynx secretion, liquor, thick drop of blood. 5. Bacteriological examination of nasopharynx secretion, liquor, blood. 6. Serological methods (DHAR). 7. ECG examination 8. Pneumonography 9. Consultations of:	the young forms. Aneosinophilia, ESR is increased. Signs of toxic kidneys lesion: albumin, single cylinders and red corpuscles. Taking into account polyorganic lesions at generalized forms of meningococcal infection will be defined by the indexes of blood coagulation, kidney tests, acid-alkaline balance, electrolyte content of plasma Intracellularand extracellular gramme-negative diplococci or single cocci are revealed. The positive result is the confirmation of diagnosis. The probedmaterial is taken before etiotropic therapy and kept in thermostat for the temperatures of 37°C no more than 2-3 hours Used for retrospective diagnostics. Carried out at heavy process repeatedly (in dynamics). If there are pneumonia signs. To clarify the character of

		- neurologist; -otorhinolaryngologist; - ophtalmologist; - cardiolog	neurological lesions Obligatory examinations at presence of meningitis (meningoencephalitis) Obligatory consultation at presence of meningitis (meningoencephalitis) with the examination of an eye bottom. If there are signs of myocardium lesions.

6.2 Professional algorithm for forming the skills collection of material from the nasopharynx for bacteriological examination.

№	Task	Sequence of carrying-out	Comment
1.	Capture the method of selection of material from the nasopharynx for bacteriological examination	1. Take a sterile tube with a cotton swab on a bent wire. 2. Click on the root of the tongue with a spatula. Swab the upturned end of the enter of the soft palate without touching the teeth, buccal mucosa, tongue. Remove mucus. 3. Immediately send a test tube with the selected material in the bacteriological laboratory.	*Pay attention:* the selection of material is carried out on an empty stomach or 3-4 hours after eating, until the appointment of antibacterial therapy. Pay attention*:* material is delivered in the form of heat (in a water bath or warmer), the material can be stored in a thermostat at 37 ° C, no more than 2-3 hours.

6.4 **Define spinal liquid changes in the cerebrum liquor lesions of different etiology** **α=3**

Disease Signs	Meningism	Serous viral meningitis	Serous tubercular meningitis	Purulent bacterial (including meningococcal meningitis)	Subarachnoid hemorrhage
Color, transparency: - colorless, transparent	+	+-	-	-	-
- colorless opaque	-	-	+	-	-
- whitish or greenish, turbid	-	-	-	+	-
- bloody	-	-	-	-	+
Pressure: - increased	+	+	-	-	+
- sharply increased	-	-	+	+	-
Cytosis: - normal	+	-	-	-	-
- leukocitic	-	+	+	-	-
- neutrophilic	-	-	-	+	-
- red corpuscles are	-	-	-	-	+

fresh and changed					
Albumin: - normal	+	-	-	-	-
- moderately increased	-	+	-	-	-
- from moderate to considerably increased	-	-	+	+	+
Dissociation: - no	+	-	-	-	-
- cellular-albuminous	-	+	-	+	+
- albuminous-cellular	-	-	+	-	-
Pandy reaction	+	+	+++	++++	+-
Nonne-Apelt reaction	-	+(++)	++++	++++	+++
Glucose: - normal	+	+	-	-	+
- reduced	-	-	+	+	-
Fibrinous film	-	-	±	+	-

6.5 List of practical tasksfor class self-training:

- To study the method of Meningococcal infection patient clinical examination.
- To carry out Meningococcal infection patient's examination.

- To carry out differential diagnostics of Meningococcal infection.
- To work out a plan of Meningococcal infection patient laboratory examination.
- To interpretate the results of Meningococcal infection patient specific examinations.
- To recognize complications of Meningococcal infection.
- To work out a plan of Meningococcal infection patient treatment.
- To define medical tactic in the case of emergency states
- To full up medical documents as far as diagnosis “Meningococcal disease” is concerned.

CHILD’S INFECTION FOR ADULTS: MEASLS, RUBELLA, MUMPS

1. Urgency

Child's infections usually refer to those infections that, prior to total immunization, affected mainly children, due to the fact of vast distribution of germs in the population, easy transmission and formation of resistant and long-term immunity after previous disease. In order to prevent most of the “infantile” infections reliable

vaccines allowing reducing the case rate for such diseases and referring them to controlled infections group, have been developing. It is implementation of preventive measures that reduced case rate for these infections for hundred times, whereas reduced duration of artificial immunity shifted the case rate to other older categories thus transforming “infantile” infections to “mostly senior” ones.

Measles, rubella and mumps play the enormous part in human pathology. Measles is one of the most contagious and infectious diseases. Every year the number of people dying of measles on the Earth is much bigger than those dying in accidents. Big prevalence, hard progress and possible development of slow infections with strong affect on central nervous system, availability of proved vaccine creating an effective immunity made WHO propose and start implementation of Program of global measles liquidation by means of inoculation system. In terms of unexpected case rate, the great focus is putting on early diagnostics of the disease to perform proper preventive measures and prevent serious complications.

Rubella is a relatively benignant, so called “dispensary” disease. However, it becomes extremely dangerous if a pregnant woman is affecting since it can lead to abortion, serious problems in the course of fetus development and even prenatal death of the child. Diseases with similar fetus effects are attributed to a separate group of TORCH-infections, the study and diagnostics of which takes an important position in the activity of infectionists, obstetricians, gynecologists, geneticists, neonatology physicians, pediatricians and, of course, family doctors.

Mumps progresses and affects not every, without exception, glandular organs and central nervous system. On the one hand, it results in hard progress of the disease, and on the other – becoming an etiological cause for such serious sequences like thyroiditis with thyroid gland functional defects, chronic pancreatitis and pancreatic diabetes, women’s oophoritis and men’s epididymoorchitis with further infertility.

As far as rubella and mumps are prevailing among children and young people, these infections place a serious problem to reproductive ability of the population. This

fact and ability to control epidemiological process by means of active immunization made WHO start the program of rubella and mumps liquidation.

2. Training tasks of the class (indicating the level of learning to be reached):

2.1. *The student should be familiar with (study):* ***a – 1***

- have general idea about position of measles, rubella and mumps in the structure of virulent diseases, prevalence in different areas of the world and different age groups; study statistic data related to case rate, case mortality, event frequency, long-term effects of infections;
- to become acquainted with history of scientific study of measles, rubella and mumps, have an idea of scientific contribution of native scientists in the history of scientific research in this field.

2.2. *The student should know:* ***a – 2***

1. epidemiology, causation and tropism of measles germ,
2. measles pathogenesis
3. clinical aspects of measles in standard progress
4. pathogenesis, genesis term and clinical aspects of measles sequela
5. measles laboratory diagnostics
6. the ways of measles treatment
7. rules of discharge of patients with measles
8. epidemiology, causation of measles and germ tropism
9. measles pathogenesis
10. clinical aspects of measles in standard progress
11. measles laboratory diagnostics
12. the ways of measles treatment
13. rules of discharge of patients with measles
14. prognosis, including prognosis for a pregnant woman and fetus
15. epidemiology, causation of mumps, and germ tropism

16. pathogenesis of mumps
17. clinical aspects of mumps in standard progress
18. mumps laboratory diagnostics
19. the ways of mumps treatment
20. rules of discharge of patients with mumps
21. prognosis of mumps
22. principles of controlled “infantile” infections prevention, immunizations schedule

2.3. The student should be able to: ***a – 3***

1. Follow the main rules of behavior next to sickbed
2. Make up medical history estimating epidemiological data
3. Examine the patient and find out the main symptoms and syndromes of measles, rubella and mumps, justify the clinical diagnosis, and solve the issue of necessary inpatient treatment
4. based on clinical examination define possible complications of measles, rubella and mumps, emergencies
5. Fill in medical documentation based on previously stated diagnosis measles, rubella and mumps (emergency call to regional epidemiological department).
6. Make up a plan of patient’s laboratory and instrumental examination
7. Analyze the results of laboratory examination
8. Give a proper estimate to the results of specific methods of diagnostics
9. Make up an individual treatment plan taking into account epidemiological data, stage of disease, available complications, severity of the condition, allergic anamnesis, comorbidity, provide rescue emergency care
10. Make up a preventive measures plan for the centre of infections
11. Provide recommendations related to mode of treatment, diet, examination and medical supervision during recovery period

3. Information to be obtaining during pre-classroom independent work.

3.1. Basic knowledge and skills necessary for subject learning (interdisciplinary integration)

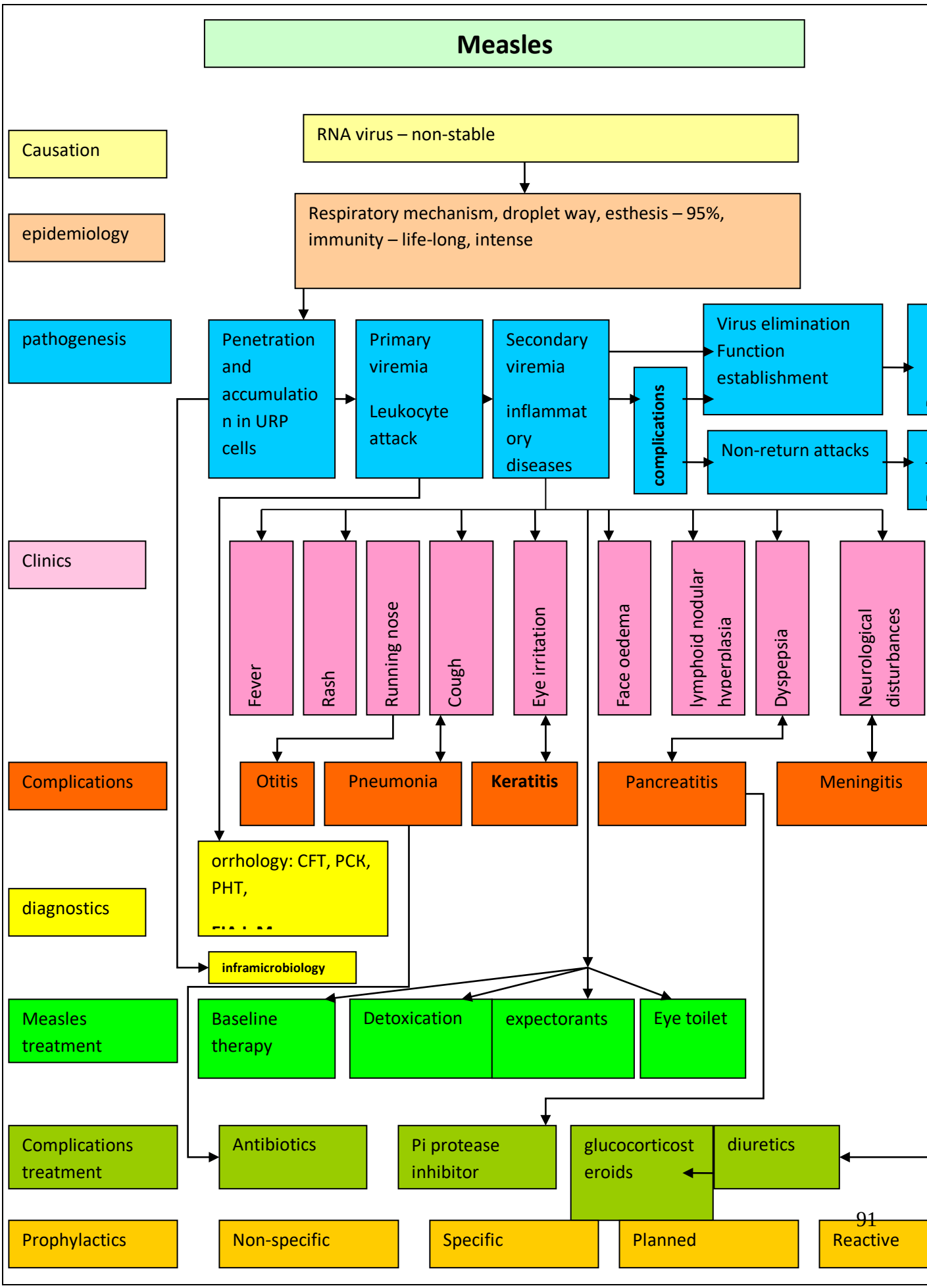
Discipline	To know:	To be able to:
Microbiology	Features of germs of measles, rubella and mumps, serological response based on disease period, rules and terms for sampling for specific diagnostics	Take samples of material for virusologic and serological testing, analyze the results
Propaedeutic of medical diseases	Main stages and methods of patient clinical examination	Make up medical history, perform clinical examination of the patient by different organs and systems, define clinical symptoms of pathology
Epidemiology	Epidemic process (source, mechanism of infection introduction, ways of transmission) of measles, rubella and mumps, VZV-infections; prevalence of pathology in Ukraine and in the world. WHO's strategy related to liquidation of these infections.	Make up an epidemiological history, perform antiepidemic and preventive measures in the centre of infection
Immunology and allergology	The key terms of the subject, role of immunity system in infectious process, influence on the term of germ elimination from human organism. Immunological aspects of complications	Analyze data of immunological examinations

Physiology	Aspects of physiological standards of human organs and systems; aspects of laboratory examination in standard condition	Estimate data of laboratory examination
Dermatology	Various types of exanthema and enanthema	Define the nature of rash on skin and mucous membranes at measles and rubella
Otolaryngology	Ways of oral pharynx examination. Ways of self-protection in course of infected patient examination	Examine the oral pharynx, diagnose possible pathological changes
Odontology	Anatomic structure of oral cavity. Topography of salivary glands.	Diagnose affect on mucous membrane and salivary glands
Neurology	Clinical, laboratory and instrumental signs of meningitis, encephalitis and toxic encephalopathy	Perform clinical examination of the patient with affected central nervous system. Make a lumbar puncture
Surgery	Clinical and laboratory signs of acute pancreatitis at measles and mumps	Diagnose acute failure of pancreas
Urology	Clinical and laboratory signs of affects to reproductive system at mumps	Make a due diagnosis of such complications, prescribe proper examination and provide rescue care
Clinical pharmacology	Pharmacokinetics and pharmacodynamics, adverse effects of antivirals and means of pathogenesis therapy	Prescribe treatment with regard to age, individual symptoms of the patient, chose an optimum mode of drug intake and

		dosage, provide prescriptions
Reanimation and intensive care	Emergencies: TSS Brain edema Acute respiratory failure	Make diagnosis of and provide rescue care in cases of emergency at: TSS Brain edema Acute respiratory failure
Other disciplines		
Family practice	Pathogenesis, epidemiology, intensiveness of clinical signs, possible complications of measles, rubella and mumps. Principles of prophylactics and treatment.	Perform differential diagnostics of diseases with various geneses with measles, rubella and mumps. Found out measles, rubella, mumps and possible complications; analyze results of laboratory examination. Admit the patient to contagious isolation ward in due time. Fill in the emergency notice. Provide rescue emergency care if required
Integration between subjects		

Virulent diseases	Features of infectious diseases. Methods of diagnostics, treatment and prophylactics of infectious diseases. Pathogenesis, epidemiology, intensiveness of clinical signs, laboratory diagnostics, possible complications specific features of clinical progress of measles, rubella and mumps. Prophylactics and treatment methods	Perform differential diagnostics of measles, rubella and mumps with other infectious diseases. Define “infantile” infections of adults, and their complications; analyze results of laboratory examination. Prescribe treatment. Provide rescue emergency care in pre-hospital stage.

3.2. Structure and logic scheme of class content


Measles
Causation
RNA virus – non-stable
epidemiology
Respiratory mechanism, droplet way, esthesis – 95%, immunity – life-long, intense
pathogenesis
Penetration and accumulation in URP cells
Primary viremia
Leukocyte attack
Secondary viremia
inflammatory diseases
complications
Virus elimination
Function establishment
Non-return attacks
Clinics
Fever
Rash
Running nose
Cough
Eye irritation
Face oedema
lymphoid nodular hyperplasia
Dyspepsia
Neurological disturbances
Complications
Otitis
Pneumonia
Keratitis
Pancreatitis
Meningitis
diagnostics
orrhology: CFT, PCK, PHT,
inframicrobiology
Measles treatment
Baseline therapy
Detoxication
expectorants
Eye toilet
Complications treatment
Antibiotics
Pi protease inhibitor
glucocorticosteroids
diuretics
Prophylactics
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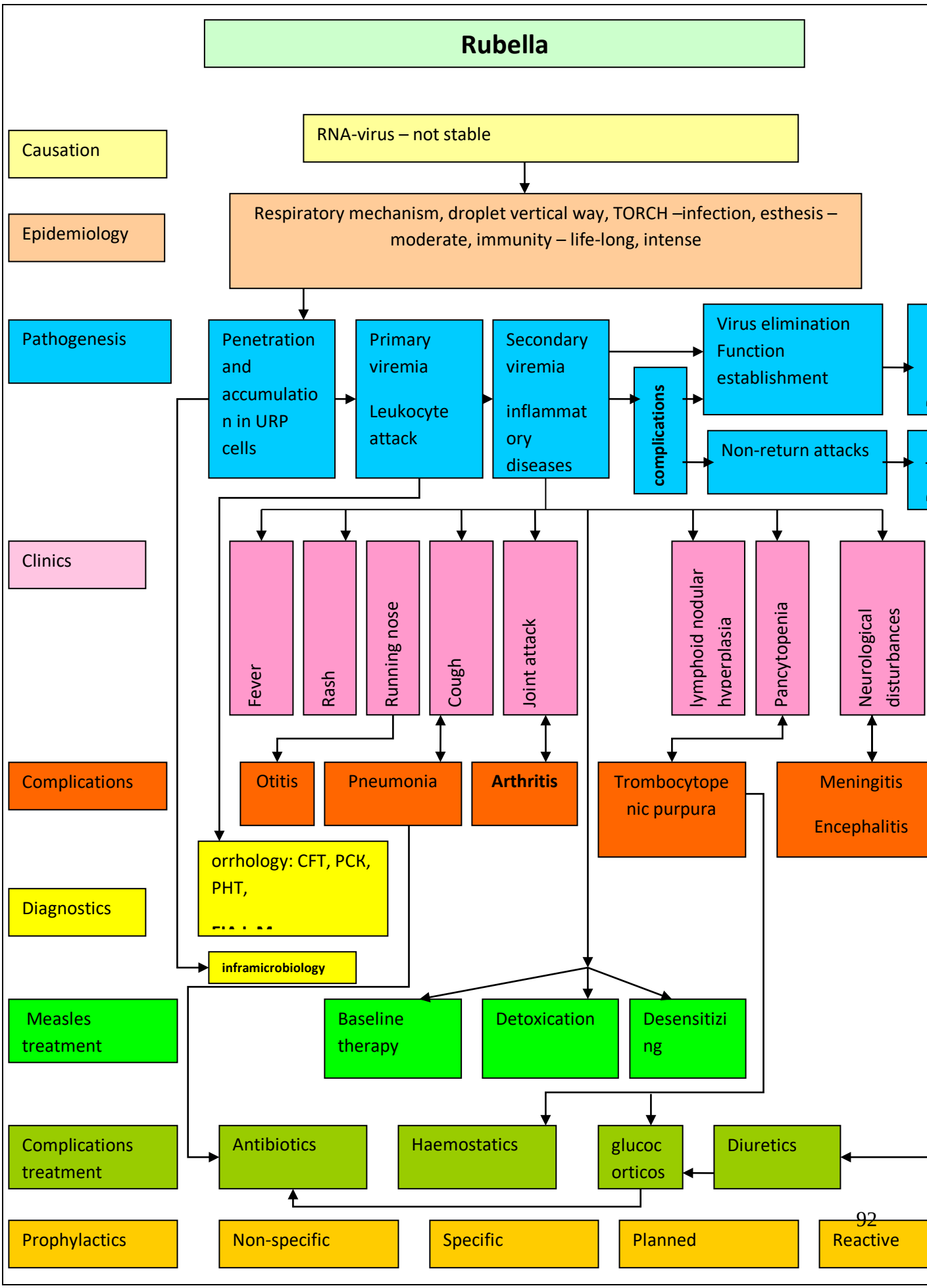
Rubella
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RNA-virus – not stable
Epidemiology
Respiratory mechanism, droplet vertical way, TORCH –infection, esthesis – moderate, immunity – life-long, intense
Pathogenesis
Penetration and accumulation in URP cells
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Diuretics
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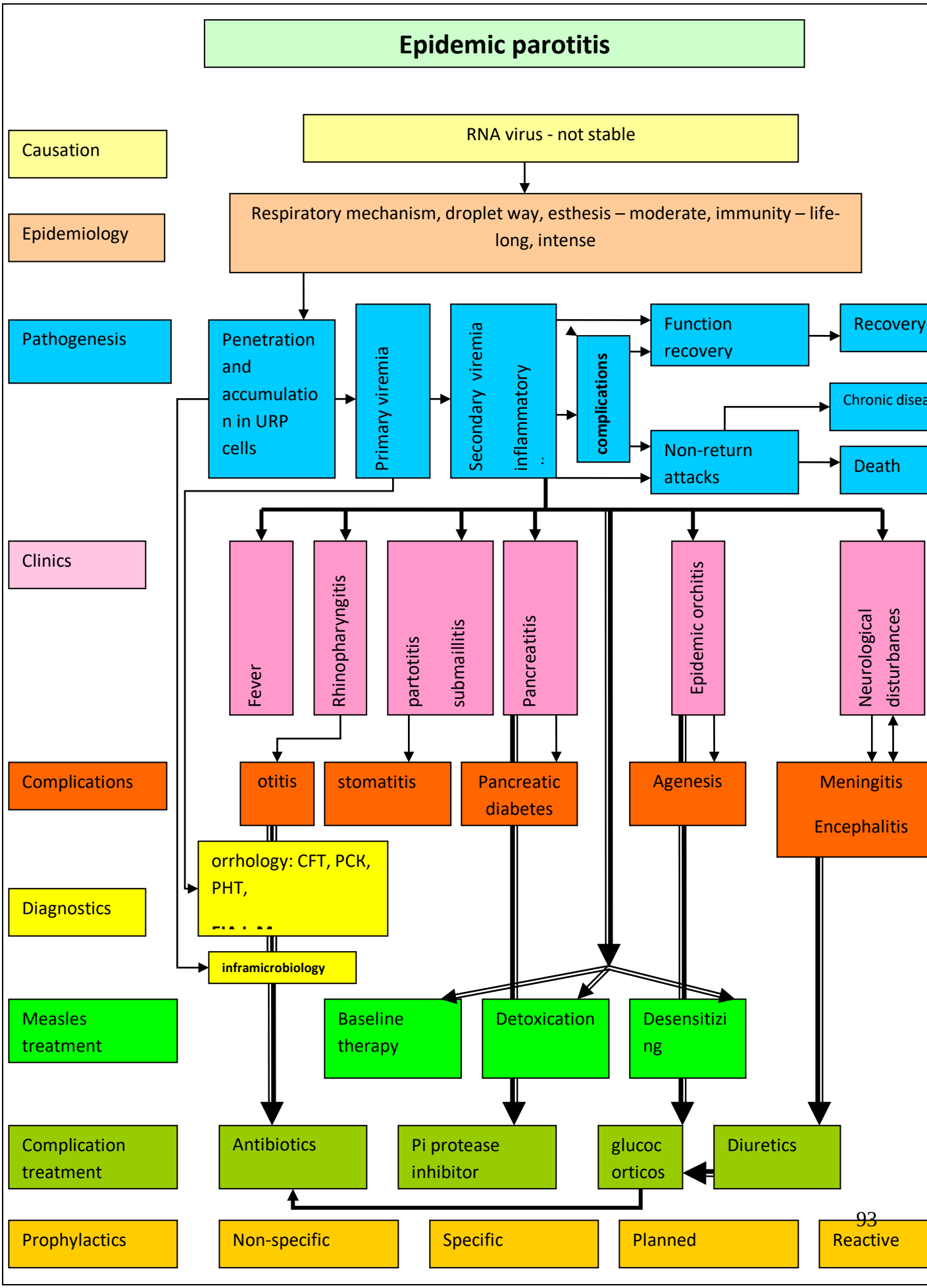
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Chronic disea
Non-return attacks
Death
Clinics
Fever
Rhinopharyngitis
partotitis
submaillitis
Pancreatitis
Epidemic orchitis
Neurological disturbances
Complications
otitis
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3.4. Materials for self-control

3.4.1. Questions for self-control

21. Which group with regard to infection source do measles, rubella and epidemic parotitis refer to, modes of transmission
22. Tropic nature of measles, rubella and mumps viruses
23. Stages of measles, rubella and mumps pathogenesis
24. Stages of cyclic clinical measles progress
25. Major symptoms of measles
26. Characteristics, term of occurrence and intensity of rash of patient with measles
27. Specific features of mitigated measles progress
28. Key symptoms of rubella
29. Symptoms of lacrimal glands attack by mumps
30. Nervous system attack by mumps infection
31. Clinical symptoms of pancreatic gland attack by mumps and measles
32. Influence of rubella virus on fetus, sequences of congenital rubella
33. Complications of measles and rubella
34. Examination plan for patient with measles
35. Examination plan for patient with rubella
36. Examination plan for patient with mumps
37. Specific diagnostics methods for measles, rubella and mumps
38. Indications for etiotropic treatment of “infantile infections” of adults
39. Principles of nosotropic treatment of measles, rubella, mumps
40. Rules of “infantile infections” convalescent discharge from in-patient hospital

3.4.2. Tests for self-control

Choose the correct answer: **α=2**

1. At the child of 4 years on a background of a fever up to 39,0 ºС and catarrhal signs on the 2nd day of disease there appeared the polymorphic rash on the skin of pilar part of the head, the face, a trunk and extremities: red macula's, papules and vesicles with a transparent liquid. Your diagnosis?

A.* Chicken pox

B. Measles

C. German measles

D. Meningococcosis

E. Allergic reaction

2. At the patient of 56 years there appeared attacks of a pain in the left half of thorax, general weakness, fever, headache two days ago. At examination: on the course of 4-5 intercostal intervals at the left there are the elements of vesicular rash of 2-4 mm in diameter, filled with the transparent liquid, located on hyperemic and edematic background. The diagnosis.

A. Chicken pox

B. Measles

C. A scarlet fever

D. *Herpes zoster

E. Streptococcal impetigo

3. Drugs of choice during the acute period of parotitis pancreatitis are

A.Antibiotics

B. *Inhibitors of proteolysis, spasmolytics

C.Enzymes

D. Vitamins

E. Lasix, manitol

4. Patient T., 20 years. Felt ill acutely, complains of a headache, single vomitting, temperature rise to 40º C, severe sore throat. His face is hyperemic, nasolabial triangle is pale, on the skin of a trunk, extremities there is the rash punctata on hyperemic

background with elements of its condensation in natural folds. The amygdales are hyperemic , lacunes are filled with pus. Your diagnosis.

A. Chicken pox

B. Measles

C. *Scarlet fever

D. Herpes zoster

E. Streptococcal impetigo

5. Patient H., complains of dehumidified cough, photophobia, headache, temperature rise. Objectively - conjunctivitis, edema of eyelid. Mucous membranes of cheeks loosened, spotted, in transitional fold region at premolars there are the small whitish spots surrounded with a crown of hyperemia. Your diagnosis

A. Adenoviral infection

B. Thrush

C. *Measles

D. German measles

E. Herpetic infection

6. Patient S., complains of mild pyrexia, stuffiness in nose, he has a rasping feeling in his throat, a rash. Objectively – there are the plentiful small-maculous rosy-pale elements of rash located on normal skin of the face, breast, abdomen. There is occipital and posterior cervical lymphadenitis at the patient. Your diagnosis

A. Measles

B. Enterovirus infection

C. Scarlet fever

D. Infectious mononucleosis

E. *Rubella

7. Glucocorticoids at a chicken pox must be prescribed

A. At grave course of the disease

B. *At development of varicella encephalitis

C. Mustn’t be prescribed

D. To children and old men

E. At presence of an concomitant pathology

8. The patient of 45 years consulted the doctor with complaints on appearance of skin rash, temperature rise up to 37,6°C. At objective examination: there is the isolated polymorphic rash as macules, papules, vesicles on the skin of the face, trunk, hands, legs, pilar part of the head. The diagnosis?

A. Scarlet fever

B. Measles

C. Pseudotuberculosis

D. Enterovirus infection

E. *Chicken pox

9. Filatov-Koplik spots at measles appear

A. Are not typical

B. During the convalescense period

C. In the incubation period

D. In the height of disease

E. *For 1-2 days before the eruption onset

10. A place of fixing of Varicella-zoster virus in an organism exists in

A. Mesenteric lymph nodes

B. Macrophages

C. Hepatocytes

D. *Skin epitheliocytes and mucous membranes

E. Langergance cells

11. Patient P., 16 years, complains of temperature rise to 38.5º, weakness, an indisposition, a headache, a nagging pain in left parotic region, tinnitus and ringing in the left ear. There defined the swelling of the elastic consistency, moderately painful in left retromandibular space. Lobe of the ear it is elevated and sticked up. In 3 days the

similar swelling appeared on the right side of the face. In WBC-test you see leukopenia, relative lymphocytosis and monocytosis, cells of Turk, accelerated erythrocyte sedimentation rate (ESR). Your diagnosis.

A. Purulent lymphadenitis

B Tuberculosis

C. *Epidemic parotitis

D. Anginous - bubonic form of tularemia

E. Infectious mononucleosis

12. Encephalitis at German measles develops

A. On 1-2nd day of disease

B. On 2-3rd day of disease

C. Does not develop

D. *On 4-5th day from the beginning of disease

E. In 2 weeks after convalescence

13. Patient O., 23 years, is not vaccinated. He is ill during 2 day. Complains on cough, the indisposition, body T˚ 38,1°C. He is flabby. Integuments are pure. Conjunctivitis. There is enanthema at the palate, on mucous membrane of cheeks there are the whitish spots with a crown of hyperemia. There are a rough breath sounds in lungs. The probable diagnosis?

A. *Measles

B. German measles

C. Enterovirus infection

D. Scarlet fever

E. Flu

14. At the patient with rubella on the 5th day from the beginning of disease temperature rise to 39ºC, the headache appeared, three times he felt vomiting, focal neurological signs , loss of consciousness is noted. Your diagnosis

A. Acute stroke

B. A hypertensic crisis

C. *Rubella complicated with encephalitis

D. Cerebral hemorrhage

E. Subarachnoid hemorrhage

15. Patient A., complains of temperature rise to 38.5º, malaise, a headache painful swallowing, rash. At examination - on the skin of the face, the trunk, the pilar part of the head there are elements of a plentiful polymorphic rash like macules, papules, vesicles. On the soft palate and arches there are the solitary vesicles. The diagnosis.

A. Smallpox

B. Streptococcal impetigo

C. Herpetic infection

D. *Chickenpox

E. Shingles

16. Patient M., feels ill during 3 days. Was ill acutely from temperature rise to 40ºC, a headache, anorexia, sore throat. At examination – there is the rash punctata on hyperemic skin background with elements of a condensation in natural folds located on the cheeks, the trunk, flexor surfaces of extremities. The tongue is furred by a grayish incrustation. There is the “circumscribed” hyperemia of amygdales, arches, uvula, the soft palate at oropharyngeal surface, at the hard palate there is enanthema, the amygdales are porous. Your diagnosis.

A. *Scarlet fever

B. Measles

C. Pseudotuberculosis

D. Entorovirus infection

E. Chicken pox

17. Patient P., is ill during 5 days. Disease began acutely from temperature rise, a headache, dehumidified cough, a photophobia. On the 4th day of disease the rash appeared on the face, the neck, behind the ears. Next day the rash disseminated to the

trunk. A rash has maculopapulosis character, here and there it is confluent, on normal background of skin. The rash onset was accompanied by increase of body T˚. Your diagnosis

A. German measles

B. Enterovirus infection

C. Stevens - Johnson's syndrome

D. *Measles

E. Infectious mononucleosis

18. What allergic character complications are developing at scarlet fever

A. Tonsillitis, lymphadenitis, otitis, maxillitis

B. *Nephritis, myocarditis, synovitis

C. Pneumonia, bronchitis, pleurisy

D. Meningitis, encephalitis

E. Polyradiculoneuritis

19. Changes in WBC at scarlet fever

A. Leukopenia, lymphomonocytosis

B. Leukocytosis, neutrophillosis, monocytopenia

C. *Leukocytosis, neutrophillosis with shift to the left, eosinophillia

D. Leukocytosis, lymphomonocytosis, atypical mononuclear cells

E. Leukocytosis, neutrophillosis with shift to the left, aneosinophillia

20. At the 8-th day of disease the patient with epidemic parotitis has body T˚ 39.5º, pains in epigastric region with irradiation it to the left lumbar region, a nausea, vomitting, positive Woskresensky symptom. What has developed at the patient?

A. Alimentary toxic infection

B. Acute gastritis

C. *Parotitis pancreatitis

D. Exacerbation chronic gastroduodenitis

E. Exacerbation of chronic gastritis

Fill in the table: ***a = 3***

Find the symptoms attributable to these diseases

	Measles	Rubeola	Scarlet fever	Syphilis - II
Fever	+++	+	+++	+/-
Tracheobronchitis	++	-	-	-
Rhinopharyngitis	+	+	-	-
Tonsillitis	-	-	+++	+
Bulky lymphadenopathy	+/-	+	-	+
Regional lymphnoditis	-	-	++	++
Menocelis	+	+++	+++	++
Papular eruption	+++	+	-	++
Polymorphism of skin eruption	-	-	-	+
Pigmentation	++	-	++	+
Skin peeling	+	-	++	-

3.4.3. Problems for self-control

Situational problem 1 **α=3**

Patient E, 18 years old, entered contagious isolation ward on the 3rd day of disease, complaining of xerostomia, fever, swelling of the right parotic area. At in-patient hospital he received tavegil, ascorutin and local fomentation. No positive progress was noticed. On the 7th day of disease fever was accompanied with pain in the left testis that looked physically increased, and increasing headache.

Results of examination: grave condition, conscious, adequate, slightly retarded. Body temperature – 39,7oc, skin without rash, pale. Face and neck look asymmetric on account of soft, painless swelling of right parotid gland. Amygdalas are not increased, without any pellicle. Good cardiac sound and cardiac rhythm. Boggy pit of the stomach,

palpatory tenderness, liver and spleen not increased. Moderate stiffness of occipital muscles, positive Kernig and Brudzinskiy's symptoms. Swollen left testis, tender, congested skin.

1. Primary diagnosis. 2. Examination plan. 3. Treatment

4. Materials for classroom individual work

4.1. List of practical training tasks to be done during the practical class:

- Study methods of examination of patient with measles, rubeola and epidemic parotitis
- Examine the patient for measles, rubeola and epidemic parotitis
- Perform differential diagnostics of measles, rubeola and epidemic parotitis
- Make up a plan of laboratory examination
- Study the results of specific examination of patients with measles, rubeola and epidemic parotitis
- State the complications of measles, rubeola and epidemic parotitis
- Make up a treatment plan for the patient with measles, rubeola and epidemic parotitis
- Define medical approach in case of emergencies.

4.2. Professional algorithm of gaining knowledge and skills of measles, rubella ad mumps diagnostics

№	Task	Sequence of actions	Notices and warnings concerning self-control
1.	Study the methods of examination of patient	Listen to complaints	Divide complaints attributable to syndromes of: - total toxicosis - organs attack

	with measles, rubeola and parotitic infection	Medical history	- additional influences Sequence and period of development of - fever - catarrhal syndrome - rash - glands and nervous system affect - additional syndromes (nausea, vomiting, purulent expectoration etc.)
		Patient's life history	- precious diseases, including measles
		Epidemic history	Establish: - contact with patients with measles, rubeola and epidemic parotitis - vaccination
2.	Examine the patient	1. General look	- Estimate the condition and position of the patient
		Skin Face	- rash, if any, its nature, location, possible merger - color, swelling, asymmetry on account of increased salivary glands
		Eyes	- skleritis, conjunstivitis, blepharoncus - hyperemia, swelling, xerostomia
		Oral pharynx	- enanthem on soft palate (Y/N) - Koplik's spots (Y/N) - Mursu symptom (Y/N) - follicular pharyngitis (Y/N)
		Voice	- mobility of soft palate
		Nervous system	- loudness, clarity, hoarseness, nasality - meningeal signs

		2. Palpation Lymphatics Salivary glands Lungs Alvus Muscles 3. Percussion Heart Lungs 4. Auscultation Heart Lungs	- focal symptoms - menigeal signs - size, stiffness and tenderness of lymphatic nodes - size, tenderness, consistence - twiddle - size and signs of liver and spleen, pancreas - palpatory tenderness, Voskresenskiy's symptom - meningeal syndrome (Y/N) - pareses, paralyses (Y/N) - percussion cardiac borders - comparative topographic lung percussion (percussion symptoms of pulmonary tissue induration, available or not) - rhythm and clarity of cardiac tones, soundness of cardiac tones - breathing pattern – vesicular, hoarse, bronchial; diminished breath sounds, hurried breathing - rapathological breathing phenomena – crepitation, rhonchi, their nature, location, changes in the course of breathing, after coughing

			- bronchophony
3.	Perform laboratory examination	1. Clinical blood analysis 2. Urine analysis 3. Urine diastasis 3. ECG 4. X-ray examination of thoracic organs 5. Serologyc methods: Passive hemagglutination test	- leukocyte level, neutrophils, lymphocytes and IPT - content of leukocytes, erythrocytes and protein - level - signs of infectious and toxic myocarditis (Y/N) - diffuse or focal lesion of pulmonary tissue - starting from the 4th day of disease, anti Morb IgM - in paired sera – level increase by 4 times and over

Theme: DIPHTHERIA

The theme topicality:

Diphtheria meets worldwide But the real morbidity is unknown. Even in the developed countries only 11-63% cases of disease are reported to officialstatistics. Since

1991 in Ukraine and other republics of the USSR the level of diphtheria has increased after the epidemic well-being. That allowed ascertaining the presence of epidemic. The principal reasons of such situation were non-observance of the vaccination calendar, falsification and groundless refusal of them, insufficient immunogenicityof the vaccines used. Unfavorableeconomicand social conditions were also conductive to form secondary immunodeficiency among population. Since 1996 the intensity of diphtheria epidemic process has been observed due to carrying out variousmeasures, first of all mass immunization. Since 1999 the disease has been registered as sporadic cases. But the problem of diphtheria remains topical. Specific gravity of heavy and complicated forms as well as death rate indicators remains high on a background of disease decrease.

Knowledge of this pathology is necessary for any as efficiency and timeliness of medical aid rendering and conducting of antiepidemic measuresdepend on quality and speed of diphtheria diagnostics.

2. The objectives of the studies (including planned level of mastering):

2.1. A student must have general knowledge: *a* -1

1. *to have general knowledge :* about the diphtheria place in the structure of infectious diseases, history of study, scientific contribution of native and foreign scientists to the history of scientific researches in this field.

2. *to familiarize*: statistical data concerning diphtheria prevalence, lethality, complications frequency, bacteria carrying in Ukraine and in the world nowadays.

2.2. A student must know: *a* -2

- diphtheria etiology, factors of agent pathogenicity, place and role of non-toxigenic strainsand diphteroidsin human pathology;
- epidemiology of diphtheria, peculiarities of modern epidemiological process;
- pathogenesis;
- classification;
- basicmanifestations of diphtheria different clinical forms;
- diphtheria process peculiarities in immunized people, personswith removed tonsils;

- pathogenesis, terms of originating and clinical manifestations of diphtheria complications(TSSh, myocarditis, the nervous system lesions, nephrosonephritis);
- diphtheria laboratory diagnostics;
- principles of treatment;
- principles of prophylaxis;
- tactics of patients' treatment in the case of emergency states (ITSH, diphtheritic croup, acute cardiac failure, DIC-syndrom, neuroparalytic acute respiratory failure, acute kidney failure);
- diphtheria prognosis;
- rules of discharging from the hospital;
- rules of the dispensary system

2.3. A student must be able: a -3

- to keep the basicsanitary antiepidemic rules working with diphtheria patient;
- to take the medical history with the estimation of epidemiological data;
- to examine a patient and findout basicsymptoms and syndromes of diphtheria, to make the substantiation of presumptive diagnosis;
- to carry out differential diagnostics of diphtheria with diseases which have similar clinical manifestations (quinsy, infectious mononucleosis, scarlet fever, paratonsillar abscess, ARVI, tularemia, leucosis, etc);
- to recognize possible complications of diphtheria, urgent states on the basis of clinical examination in good time;
- to draw up medical documents as far as the establishment of preliminarydiagnosis "diphtheria" is concerned (an urgent report to the sanitary epidemiological station (SES);
- to workout a plan of patient's laboratory and additional examination;
- to interpret the results of laboratory examination, including specific methods of diagnostics;

- to workout an individual plan of treatment taking into account epidemiological data, clinical form of illness, severity of process, presence of complications, allergy in anamnesis, concomitant pathology;
- to render the first aid on the pre-hospital stage in the case of emergency states;
- to work out a plan of antiepidemic and preventive measuresin the focus of infection;
- to give recommendations concerning the regimen, diet, examination, supervision to convalescents.

3. Materials for out-class self-training (before practical classes)

3.1. Basic knowledge, abilities and skills necessary for studying theme "Diphtheria" (interdisciplinary integration)

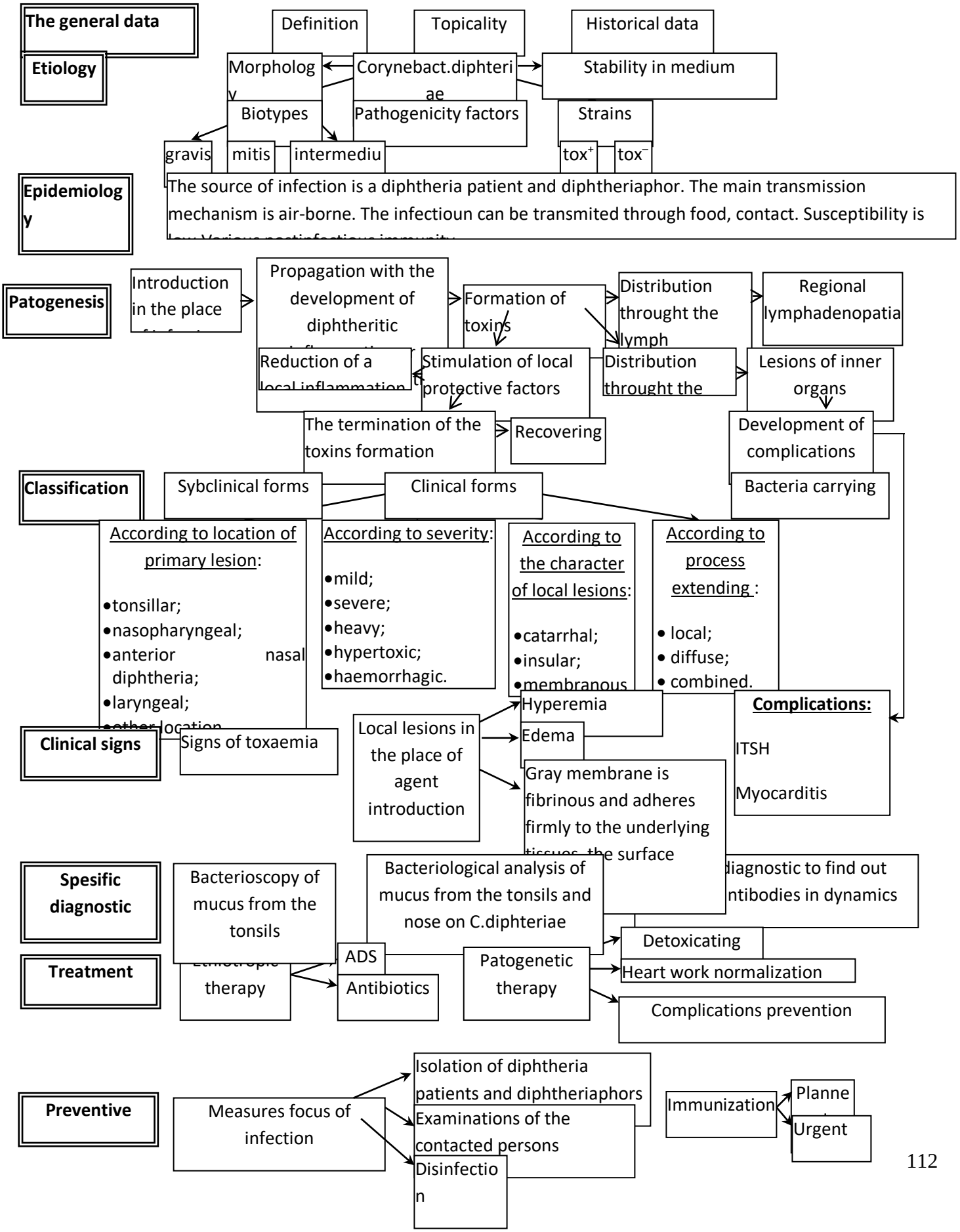
Subject	To know	To be able to
Previous subjects		
Microbiology	Properties of Corynebacterium of diphtheria (c.d.); methods of diphtheria specific diagnostics.	To interpret the results of specific methods of diphtheria diagnostics.
Physiology	Parameters of physiological norm of human organs and systems; standard laboratory examination indexes (total blood count, clinical urine analysis, biochemical blood analysis, parameters of AOS, electrolytes etc).	To estimate the laboratory examinations data.
Pathological	Mechanism of organs and	To interpret pathological changes as a

Physiology	systems dysfunctions with pathological conditions of different genesis.	result of laboratory examination on organs and systems dysfunction of different genesis.
Immunology and Allergology	Basic terms of subject, role of immune system in the infectious process, influence on the elimination term of agent from the human organism. Immunological aspects of C.d. bacterial carrying.	To estimate the data of immunological investigations.
Epidemiology	Epidemic process (source, mechanism of infection, ways of transmission), diphtheria distribution in Ukraine and in the world.	To take the epidemiological history, carry out antiepidemic and preventive measures in the focus of infection.
Neurology	Pathogenesis, clinical signs of vegetative and peripheral nervous systems lesions on diphtheria.	To examine the patient with the nervous system lesions.
Propaedeutics of General Medicine	Methods and basic stages of patient's clinical examination.	To take the history, to examine the patient, find out pathological symptoms and syndromes. To analyse findings.
Clinical Pharmacology.	Pharmacokinetics and pharmacodynamics, side effects of diphtheria antitoxin (DAT), penicillin,erythromycin,	To prescribe treatment depending on age, individual peculiarities of patient, to choose the optimum mode of drugs administrations and dose

	ampicillin, means of pathogenetic therapy.	age, give prescriptions.
Reanimation and Intensive Therapy	Emmergency states: ITSH Diphtheritic croup Acute cardiac failure DIC-syndrom Acute kidney failure Neyroparalytic acute respiratory failure	In good time to diagnose and render the first aid in such emmergency states: ITSH Diphtherial croup Acute cardiac failure DIC-syndrom Acute kidney failure Neyroparalytic acute respiratory failure
Following subjects		
Family medicine	Pathogenesis, epidemiology, classification, clinical manifestations and their dynamics, complications, laboratory diagnostics of diphtheria.	To carry out differential diagnostics of different genesis diseases with diphtheria. To diagnose diphtheria, its complications, to interpret the data of laboratory examinations. To hospitalize a patient to isolation hospital in good time. To fill in an urgent report. To render help in the case of emergency on the pre-hospital stage.
Intra-subject integration		
Infectious diseases	Peculiarities of infectious diseases. Principles of diagnostics, treatment,	To carry out differential diagnostics of diphtheria with other infectious diseases. To diagnose diphtheria, its

	prophylaxis of infectious diseases. Pathogenesis, epidemiology, dynamics of clinical manifestations, laboratory diagnostics, treatment and prophylaxis of diphtheria, its complications.	complications; to interpret the data of laboratory examinations. To prescribe treatment in the case of emergency, to render the first aid on the pre-hospital stage.

3.2. Theme contents :



3.4. Methodical materials for self-training of students:

Main	Recommendation	Keys
To : Etiology	Namean agent, morphological features, factors of pathogenicity, growth on medium firmness to the action of external environment factors.	
Epidemiology	Describe the sourcesof infection, name the mechanism and way of infecting, receptivity.	
Pathogenesis	Namethe basic links of pathogenesis	
Classification	Give classification of diphtheria clinical formsaccording to localization process, severity and distribution, character of local changes.	
Clinical manifestation	Describe clinical manifestations of different forms of diphtheria.	
Diagnostics	Give the list ofspecific diagnostics methods.	
Differential diagnostics	Fill in the table of differential diagnostics.	
Treatment	Name the means of etiothropic, patogenetic therapy, doses, ways of introduction	
Prophylaxis	Work out a plan of antiepeidemic measures in the focus of diphtheria.	

3.5. Self-control materials

3.5.1. Questions to be answered

21. When and whom was the agent of diphtheria opened by?
22. What scientist offered term “diphtheria”?
23. What aspects of diphtheria treatment has the Nobel been awarded for?

24. When did the diphtheria epidemic begin in Ukraine? When was the increase of diphtheria?

25. Stateof morbidity on diphtheria in Ukraine and in the world.

26. What is the agent of diphtheria? Describe its morphological features.

27. What factors of pathogenicity are producted by an agent?

28. What are the biotypes and strains of the agent?

29. Describe exotoxine of C. diphtheria.

30. Specify agent stability tothe action of environmental factors

31. Speak about modern points of view on the non-agent's strains role in the development of disease.

32. Describe the sourceof infection, name the mechanism and basicways of getting infection.

33. Pathogenesis of diphtheria.

34. Classification of diphtheria clinical forms

35. Clinical forms and basic manifestations of tonsillar diphtheria .

36. Clinical forms and basic manifestations of anterior nasal diphtheria .

37. Laryngeals diphtheria, stages of diphtheritic croup.

38. Peculiarities of diphtheria process in immunized people.

39. Peculiarities of diphtheria process in patients with removed tonsils.

40. Specific and non-specific complicationsof diphtheria. Principal reasons of diphtheria lethality.

41. Pathogenesis, clinical manifestations of TSSH, terms of origin.

42. Pathogenesis, clinical manifestations of diphtheritic myocarditis, terms of origin, criteria of diagnostics.

43. Pathogenesis, clinical manifestations of diphtheria neurological complications, termsof origin.

44. Pathogenesis, clinical manifestations of kidneys lesions at diphtheria.

45. Plan of diphtheria patient examination.

46. Methods of diphtheria specific diagnostics. Interpretation of research results.

47. Etiotropic therapy of diphtheria: drugs, doses, ways of administrations, duration of treatment.

48. Principles of diphtheria pathogeneticherapy

49. Sanitation of diphtheria.

50. Discharging from the hospital.

51. The clinical care of convalescents.

52. Measures in the focus of diphtheria.

3.5.2. Self-control tests

Choose right answers: α=2

1. Specify the etiological agent of angina Simanovskogo - Vincent

A. *Association microorganisms'

B. Association of Vincenti and F. fusiforme Hoffman

B. T.pallidum

C. B.caucasica

D. Association microorganisms S.aureus and S. pyogenes

E. N. meningitidis

2. Specify the time of the appearance of changes in the oropharynx is characteristic of acute tonsillitis

A.*By the end of the first day

B. In the early hours of the disease

C. Do not appear

D. On the third day of disease

E. After normalization temperature

3. Specify the duration of fever with sore throat caused by streptococcus

A.*3 - 5 days

B. 1 week

C. An increase in temperature is not typical

D. 1- 3 days

E. 2 weeks

4. Specify the nature of the rash by streptococcus angina

A.*The rash is not typical

B. Polymorph

C. Hemorrhagic

D. Papular

E. Urticaria

5. What does the rise in temperature over 5days of angina streptococcal?

A.*On the development of complications

B. About recovery

C. About myocardial infarction

D. On immunodeficiency

E. About intestinal dysbiosis

6. Angina Simanovskogo- Vincent characterized by all of the above, except

A.*Symptoms of intoxication

B. One-sided lesions tonsils with the formation on the 5 th day of the disease A crater-like ulcers

C. Subfebrile fever

D. None or mild pain in the throat when swallowing

E. Repair of ulcers up to a few weeks

7. The catarrhal form of diphtheria is characterized by all, except

A.*Severe pain in the throat

B. Normal or subfebrile fever of body

C. Moderate hyperemia of the mucous membrane of the tonsils with cyanotic shade

D The absence severe pain in the throat

E. The absence of fibrinous coating in the oropharynx

8. Filmy form diphtheria of tonsils characterized:

A.*The presence of filmy fibrinous-attacks do not go beyond tonsils

B. Necrotic lesions on the tonsils

C. The presence of a crater-ulcer on one of the tonsils

D. The presence of fibrinous-filmy raids beyond the tonsils

E. Education bubo in the regional lymph nodes

9. Indicate the nature of inflammation develops by diphtheria of the larynx

A.*Croupous

B. Diphtheritic

C. Purulent

D. Do not develop inflammation

E. Catarrhal

10. Specify significance the appearance of the triad Molchanov (vomiting, abdominal pain, persistent gallop rhythm) in patients with myocarditis of diphtheria

A.*Adverse prognostic sign

B. Prognostic sign of favorable

C. Do not have prognostic value

D. Testify about improvement

E. Indicates on the an acute myocardial infarction

11. The specific complications of diphtheria include everything, except

A.*Intestinal dysbiosis

B. Myocarditis

C. Nefroso-nephritis

D. poliradiculitis

E. Paresis of the soft palate

12. Specify etiological agent of diphtheria

A. *C. diphtheriae

B. C. xerosis

C. C. ulcerans

D. C. pyogenes

E. C. tetani

13. Specify the main factor of pathogenicity of C. diphtheriae:

A *Exotoxin

B. Endotoxin

C. Hyaluronidase

D. Neuraminidase

E. Coagulase

14. Specify the seasonally of diphtheria

A.*Autumn-Winter

B. Spring-Summer

C. No

D. Autumn

E. Winter-Spring

15. Specify the mechanism of transmission of diphtheria

A.*Airborne

B. The contact-household

C. Alimentary

D. Vertical

E. Parenteral

16. Hypertoxic form of diphtheria is characterized by a

A.*The rapid progression sings of intoxication and development toxic shock with backwardness development of local changes in the oropharynx

B. Progression of symptoms of intoxication

C. Lack of oropharyngeal changes characteristic of diphtheria

D. Moderate of intoxication and fibrinous inflammation in the oropharynx

E. The absence of symptoms of intoxication

17. In the early stages of diphtheria in the nervous system affected

A.*Cranial nerves

B. Phrenic nerves

C. Intercostal nerves

D. Pharyngeal nerves

E. None of the nervous system damage

18. In the first days of the disease illnes diphtheria death can occur from

A. Toxic shock, croup

B. Acute cardiovascular insufficiency

C. Severe myocarditis

D. Myocardial Infarction

E. Algid

19. Leukogram in severe course of diphtheria is characterized by

A.*The neutrophilic leukocytosis, aneosinophilia, monocytopenia

B. Leukopenia, limphomonocitosis, eosinophilia

C. Leukocytosis, stab shift to the left, lymphopenia

D. Leukopenia, neutropenia, lymphocytosis

E. Leukocytosis, eosinophilia, Türk cells

20. Changes in the urine in the development nephroso-nephritis characterized

A.*. High-density of urine, content protein of up to 10 g/l, and the presence of hyaline granular cylinders

B. Low density of urine, lack of protein, and the presence of red blood cells and leukocytes

C. Normal urine density, protein content of up to 10 g/l, presence of hyaline and granular cylinders

D. No changes

E. Low density of urine, lack of protein, and the presence of red blood cells, leucocytes, bacteria

21. Hospitalization of patients with angina held

A.* In a provisional department of infectious hospital

B. In the therapeutic department

C. In the otolaryngologic department

D. Don’t hospitalized

E. Do not hospitalized, been under the supervision of the family

22. At the stage of the initiation of the immune response in diphtheria key role belongs

A.*T-helper cells

B. T-killers

C. circulating immune complexes

D. B-lymphocytes

E. macrophages

23. Antitoxic antidiphtheritic immunity presented

A.*. Ig G

B. Ig M

C. Ig A

D. Ig E

E. heterophile antibodies

24. Antibacterial antidiphtheritic immunity presented

A.*Ig M

B. Ig G

C. Ig A

D. Ig E

E. heterophile antibodies

25. Protective titers of antitoxic antidiphtheritic immunity is

A.*0.1 IU/ml or higher

B. 0.03 U / ml or higher

C. 0.1 U / ml or less

D. 0.03 IU / ml or less

E. 0.03 - 0.1 IU / ml

26. Sanitation carrier's C. diphtheriae is

A.*The infectious department

B. The otolaryngologic department

C. In the therapeutic department

D. In the provisory department

E. At home

27. Specify specific therapy is diphtheria

A.* Antidiphtheritic serum, antibiotics

B. Antidiphtheritic serum

C. Antibiotics

D. Bacteriophage

E. Sulfonamides

28. Specify mechanism damage of kidney at diphtheria

A.*The action of the toxin, the CIC

B. Intoxication

C. Violation of the microcirculation

D. Hypoxia

E.Hypercapnia

29. The development of non-specific complications at diphtheria caused.

A.*Merger and activation of secondary bacterial microflora

B. Immunodeficiency

C. Thymomegaly

D. Age of the patient

E. Vaccination status of the patient

30. The localized form of nasal diphtheria presented

A.* Catarrhal, Catarrhal - ulcers, membranous

B. Catarrhal

C. Catarrhal - ulcers

D. Membranous

E. Disseminated

31. Hypertoxic form of diphtheria is characterized by a rapid start, the growth of clinical symptoms during the 1-2 days of development

A *. ITSH, DIC

B. myocarditis

Meningitis C.

D. Pneumonia

E. False croup

32. Monitoring of the patient contact with sick diphtheria done

A * During 7 days from the date of separation with the patient

B. During 10 days

C. During 14 days from the date of separation with the patient

D. Prior to the recovery of the patient with diphtheria

E. The period of one year in the CIC

33. The patient, on the background of a normal temperature and a relatively satisfactory state, complaints of nasal obstruction, nasal discharge sukrovichnoe within 8 days. The skin near the nasal passages macerated. Enter the probable diagnosis.

A *. Diphtheria of the nose

B.Influenza

C. Rhinovirus infection

D.Meningococcous nasopharyngitis

E. Parainfluenza

34. Specify the cause of death in the development hypertoxic forms of diphtheria:

A *Infectious-toxic shock

B. Respiratory failure

C. Polinevritis

D. Myocarditis

E. Myocardial Infarction

To fill a table: **α=3**

Define clinical symptoms, what are typical for diseases fauces lesions.

№	Disease / Symptoms	Diphtheria	Streptococcal quinsy	Scarlet fever	Infectious mononucleosis	Pseudomembranous tonsilitis	Tularemia
1.	Elevation of the body temperature	+	+	+	+	±	+
2.	Sore throat:						
	- intensive	-	+	+	-	-	-
	- moderate	+	-	-	+	-	+
	- insignificant or absent	-	-	-	-	+	-
3.	Edema of tonsils	+	+	+	+	+	+
4.	Hyperemia of tonsils, mucosa arches	+	+	+	+	+	+
5.	Fibrinous membrane, taken off with effort	+	-	-	±	-	+
6.	Necrotic character of tonsils lesions	-	-	±	±	+	+
7.	Pussy	-	+	+	+	-	-

	stratifications on tonsils in a form of corks which are easily taken off						
8.	One-sided tonsils lesions	-	-	-	-	+	+
9.	Lymphadenitis	+	+	+	-	+	+
10.	Limphadenopathy	-	-	-	+	-	-
11.	Rash on skin	-	-	+	±	-	-
12.	Hepatomegalia	-	-	-	+	-	-
13.	Splenomegaly	-	-	-	+	-	-

3.5.3. Self-control tasks

Task 1 α-2

Patient A., 25 years old, complained of sore throat, painful swallowing, elevation of body temperature up to37,8°C, weakness. He fell ill 2 days ago. On physical examination: condition of middle severity. The skin and visible mucous membranes are pink, clean. The faces are hyperemic, thick gray membrane covers the right tonsil, extends to the anterior palatine arches, it is not taken off with spatula. Islands of similar membrane are on the left tonsil. Submandibular lymph nodes are enlarged.The vesicular breathing is heard over the lungs. Heart rate is normal, 88 beats per minute. Heart sounds are clear. Blood pressure is 120/70mm/Hg. Abdomen is soft on palpation, painless. The liver and spleen are not enlarged. The patient was immunized against diphtheria with non-observance of vaccination calendar.

1.Ground priliminary diagnosis.

2. Prescribe specific examination to verify the diagnosis.

Task 2 α-2

The ambulance has delivered the patient to the isolation hospital. He had diagnosis: combined tonsillar and laryngeal diphtheria, the diffuse form, heavy severity.

1. Physician's tactic as far as patient's hospitalization is concerned.

2. What additional examination should otorhynolaryngologist carry out to clarify the characterof larynx impairment?

3. Prescribe etiotropictreatment.

Task 3 α-3

Patient A 47 years old, has been hospitalized to the isolation hospital with complaints of the of the body temperature to 37°C, sore throat, painful swallowing, hoarseness, moist cough, fatigue, chest pain. According to the case history he fell ill 10 days ago. The disease started from stuffiness in nose, then serosanguineous nasal discharge and sore throat. He used self-administer drugs. On the 5th day of disease he was examined by local physician who made the diagnosis of acute bronchitis, left-side lobular pneumonia. Antibacterial therapy (ampicillin, gentamicin) was prescribed. Patient's condition didn't improve. He suffered from hoarseness, coughs, increased weakness. The patient went to the local policlinic. He was examined by infectionist, otorhinolaryngologistand directed to the isolation hospital. Previous diseases are ARVI, right-side lobular pneumonia, toxic hepatitis. He uses alcohol drinks. The patient denies contact with infectious patients the last 2 weeks prior to the diseaseHe has immunized against diphtheria two times 3 years ago At the hospitalization: patient's condition is of middle severity, the body temperature is 37,6°C, heart rate is 58 beats per minute. Languid, astetic. Skin and visible mucosa are pale clean. Fauces mucosa is hyperemic with cyanotictint, the tonsils are enlarged, there are no membranes. Submandibular and anterior neck lymph nodes are enlarged and slightly painful. Rhinoscopy shows thick grayish membranes on a background of edema and cyanosis of nasalpassages mucous

membrane. At indirect laryngoscopy – grayish membranes completely cover vocal cords. The vesicular breathing is heard over the lungs. Heart rate is abnormal, 54 beats per minute, single extra systoles, the heart sounds are dull. Blood pressure is 100/60 mm/Hg. Abdomen is softpainless on palpation. The border of the liver is palpable 2 sm lower the costal margin. The spleen is not palpable. Urinary excretion and stool are normal.

The patient was hospitalized to intensive care depatment. ADS (course dose 300000 U), antibacterial, anti-inflammatory, detoxicating therapy was carried out. On the 6th day of stay in the hospital death were certified on a background of signs of cardiac(complete A-Vblockade) and acute kidney failure (anuria). Results of the repeated bacteriological examination of mucus from the tonsils and the nose are negative.

1. Formulate the final clinical diagnosis.
2. Is it right ful to make diagnosis of diphtheria without bacteriological confirmation?
3. Cof complications developmentand their pathogenesis.

4. Materials for class self- training.

4.1. Listof practical tasksfor class self-training

- To study the method of diphtheria patient clinical examination.
- To carry out diphtheria patient’s examination.
- To carry out differential diagnostics of diphtheria.
- To workout a plan of diphtheria patient laboratory examination.
- To interpret the results of diphtheria patient specific examinations.
- To recognize complications of diphtheria.
- To workout a plan of diphtheria patient treatment.
- To define medicaltactic in the case of emergency states
- To draw up medical documents as far as diagnosis “diphtheria” is concerned .

4.2 How to work with materials for classes self-training as far as diphtheria diagnostics is concerned

№	Task	Sequence of carrying-out	Comment
1.	To study the method of clinical examination of the diphtheria patient	I. To know patient's complaints. II To take: 1.The case history	To separate complaints which characterize syndromes: - generalintoxication; - tonsils, nasopharynx, larynx lesions; - other organs lesions. To pay attention to acute onset, terms, sequence of occurrence, dynamics of - fever; - headache; - weaknesses; - sore throat; - cough; - hoarseness; - difficulty of the nasal breathing; - nasal discharge; - other symptoms.
2.	To carry out the patient's examination	2. the life history 3.the epidemiology history	To out the previous illnesses. To find out the possible source of infection and ways of infecting, pay attention to patient's stay in high risk of infection regions, to specify immunization against diphtheria (when, how many times).

		III. To carry out the physical examination of the patient.	To remember: the presence and dynamics of symptoms how they are marked and caused by pathological process localization, its distribition, degree of toxemia and (or) obstruction of respiratory passages, presence and complications, concomitant diseases and second infection.
		1.General examination - general conditionof the patient; - skin; - faucial mucosa ; - lymph nodes 2. Respiratory system: - auscultation of lungs.	To pay attention to: - weakness; -the body temperature; - pallor of skin (acrocyanosis, cyanosis); - edema of the neck of different distribution (from submandibular area to the clavicle); - stagnant hyperemia and edema of the faces mucous membranes; - presence of dense, , membrane on tonsils of insular or complete type, whichis taken off with difficultly, exposuring bleeding membrane; - soft palate paresis is possible; - submandibular lymph nodes are slightly enlarged and painfully To pay attention to: -presence of bronchitis signs (in the case of process extending to trachea, bronchial tubes); -presence of pneumonia signs (adding of the secondary bacterial infection).

			In the case of myocarditis development :
		3.Cardiovascular system: - pulse; - blood pressure; - percussionof heart; - auscultationof heart.	- tachycardiaor stable bradycardia; - fall of blood pressure; - dilation of heart borders; - heart sounds dullness; dysrhythmia.
		4. Digestive system: - abdominal palpation;	Absence of changes at typical diphtheria process. Liver is slightly enlarged at severe process.
		5.Nervous system	Signs of cranial nerves lesions (IX, XII, III,IV,VII, V pair), languid paralyses on the type of mono- or polyneuritis.
3.	To prescribe laboratory and additional examinations, interpret results	1. Total blood count.	To pay attention to changes: moderate (in the case of severity – marked) leukocytosis with the deviationof the formula to the left. ESR is moderately increased.
		2. Clinical urine analysis.	The increased level of albumincylinders, single red corpuscles are found. High specific densityand numerous of albumins (to 10 g/l) specify the development of nephrosonephritis.
		3. Biochemical methods of examination.	Absence of considerable changes at typical process.
		4. Bacterioscopy of fauces mucosa and nasalcavity or other places of lesions.	The previous results about presence or absence of bacteria, morphologically similar to C.d. can be obtained in 1-2 hours
		5. Bacteriological	

		examination of fauces mucosa and nasal cavity or other placesof lesions. 6.Serological methods: 7. ECG examination 8. Pneumonography 9. Consultations of -torhinolaryngologist; - cardiolog; - neurolog.	The positive result isthe confirmation of diagnosis, andthe negative one must not be foundation for exception at the typical processof illness. Prescribedin the repeated bloodserum with the interval of 7-10 days; blood samples for the first examination are taken before the introduction of antibiotics and diphtheria antitoxin. Carried out repeatedly(in dynamics). At presence of respiratory passages possibility signs . Obligatory with conducting of indirect laryngoscopy. For clarification of myocardium lesions presence and depth. For clarification neurological disorders character.

4.3. How to work with materials for class self-training as far as tonsils and nose bacteriological examination is concerned*:*

№	Task	Sequence of carrying-out	Comment

1.	To master methods of material taking from tonsils and nose for bacteriologic al examination	**To carry out the following steps:** Take 2 sterile test tubes with tampons and number them – 1 and 2. Take the spatula in your left hand and the sterile tampon from the test tube № 1 in your right hand. Press the spatula onto the root of the tongue, take the mucus from the tonsils on the border of normal and exposed tissue with the tampon. Don't touch the tongue and teeth. Raise up the tip of nose with the left thumb, enter the tampon from the test tube № 2 into both lower nasal passages in turn with your right hand. Immediately send test tubes №1 and №2 to the bacteriological laboratory.	Notice: it's necessary to take the materialon an empty stomach or 2 hours after meals. Notice: possible delay of sending is no more than 2 hours.

Diphtheria diagnostics and treatment algorithm

Epidemiological history:

- Contact with diphtheria patient or a diphtheriaphor.
- Non-observance of vaccination terms, revaccination.
- Autumn- winter seasonal prevalence

Yes, clinical signs

-Acute onset, signs of toxemia, elevation of the body temperature.
-**Clinicals forms: 1) tonsillar diphtheria** (the mucous membrane is hyperemic, cyanotic, edemas, thick gray membrane covers the tonsils, it is difficult to take off with spatula, bleeding surface .**2)laryngeal diphtheria** (I – hoarseness, barking cough, low gradate fever, edema and hyperemia of larynx mucous membrane. II- breathlessness, aphonia, voiceless cough, on laryngoscope – gray membranes. III- signs of acute respiratory failure, irregular pulse, mental confusion). 3) anterior nasal diphtheria (discharges are serosanguineous, edema of nasal mucous membrane, ulsers, films) 4) nasopharyngeal diphtheria (discharges are serosanguineous, hyperemia, edema of nasal mucous membrane. 5) diphtheria of other locations (skin, eyes, genitals)

Yes, diphtheria. Verification of the diagnosis: **No** **No**

- Bacterioscopy of mucus from the tonsils (gram-positive bacilli with pin-like thickenings on ends);
- Bacteriological examination (previous result in 24-48 hours., the final result in 48-96 hours.);
- Serological examinations (DHAR with repeated blood serums).

Differential diagnosis with quinsy, infectious mononucleosis, ARVI, scarlet fever etc.

Yes

Yes, diagnosis is confirmed

Determination of process severity and complications (ITSh, myocarditis, polyneuritis, nephroso-nephritis)

Treatment

- The obligatory hospitalization.
- Bed regimen (not less than 14 days).
- Etiotropic therapy: diphtheria antitoxin, the dose is defined by patient's state severity
- Antibiotics (penicillin, erytromicin).
- Pathogenetic therapy (detoxicating, anti-inflammatory drugs including glucocorticoids on severe cases and complications, hyposensitization, diuretics and others).

Recovering /discharging from the hospital

- Absence of clinical manifestations and complications.
- Negative results of 2 bacteriological analysis, carried out 3 days later antibacterial therapy termination

Preventive medical examination

- Supervision in a local polyclinic for 6-12 months.
- In case of complications the supervision of cardiologist and neuropathologist is required for 2-3 years

5. Materials for out-class self-training (for next practical classes)

Themes for students research work:

- "Clinical and epidemiological description of modern diphtheria".
- "Clinical and patogenetical description of cardiovascular system lesions for the patients with diphtheria".
- "Description of vegetative and peripheral nervous systems lesions for the patients with diphtheria".
- Modern methods of diphtheria specific diagnostics.

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2. Parazytarnыe bolezny cheloveka/ Pod red. V.P. Serhyeva. - SPb. Folyant. - 2011.- 608 s.

3. Laboratornaia dyahnostyka ynfektsyonnыkh boleznei/ Pod red. V. Y. Pokrovskoho, M. H. Tvorohovoi, Shypulyna H.A.- M.: BYNOM, 2014. - 648s.

4. Rukovodstvo po vyrusolohyy. Vyrusы y vyrusnыe ynfektsyy cheloveka y zhyvotnыkh: Pod red. D. K. Lvova. - M.: Medytsynskoe ynformatsyonnoe ahentstvo, 2013. - 1200 s.

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8. Spravochnyk po ynfektsyonnым bolezniam u detei/ Pod red. Yu. V. Lobzyna. - SPb: SpetsLyt, 2013. - 591 s.

9. Osnovи konsultyrovanyia bolnыkh VYCh-ynfektsyei: uchebn. posobye dlia vrachei / Vasylev V.V. Romanova E.S.; pod red. Yu.V. Lobzyna. –SPb. «Tsyfraonlain», 2012. - 26 s.

10. Lykhoradka u detei: Rukovodstvo / Pod red. A. Sayb Эl-Radkhy [y dr.]; per. s anhl.- M.: "НЭОТАR-Medya", 2013. - 400 s.

11. Laboratornaia dyahnostyka ynfektsyonnыkh boleznei/ Pod red. V. Y. Pokrovskoho, M. H. Tvorohovoi, Shypulyna H.A.- M.: BYNOM, 2014. - 648s.

13. Rukovodstvo po vyrusolohyy. Vyrusы y vyrusnыe ynfektsyy cheloveka y zhyvotnыkh: Pod red. D. K. Lvova. - M.: Medytsynskoe ynformatsyonnoe ahentstvo, 2013. - 1200 s.

Regulations in force

1. Zakon Ukrainy № 2861-VI vid 23.12.2010 «Pro vnesennia zmin do Zakonu Ukrainy «Pro zapobihannia zakhvoriuvanniu na syndrom nabutoho imunodefitsytu (SNID) ta sotsialnyi zakhyst naselennia».

2. Klinichnyi protokol antyretrovirusnoi terapii VIL-infektsii u doroslykh ta pidlitkiv, zatverdzhenoho nakazom Ministerstva okhorony zdorovia Ukrainy vid 12.07.2010 №551

3. Nakaz MOZ Ukrainy № 766 vid 10.09.2010 «Pro vnesennia zmin do nakazu MOZ vid 12.07.2010 № 551» - dodatok 1.
4. Klinichnyi protokol diahnostyky ta likuvannia oportunistychnykh infektsii i zahalnykh symptomiv u VIL-infikovanykh doroslykh ta pidlitkiv, zatverdzhenym nakazom MOZ Ukrainy vid 13.04.2007 № 182.
5. Nakaz MOZ Ukrainy vid 21.12.2010r № 1141. «Pro zatverdzhennia Poriadku provedennia testuvannia na VIL - infektsiiu ta zabezpechennia yakosti doslidzhen, form pervynnoi oblikovoi dokumentatsii shchodo testuvannia na VIL-infektsiiu, instruktsii shchodo yikh zapovnennia»
6. Nakaz MOZ Ukrainy № 415 vid 19.08.2005 «Pro udoskonalennia dobrovilnoho konsultuvannia i testuvannia na VIL-infektsiiu».
7. Nakaz MOZ Ukrainy vid 11.05.2010r. № 388 «Pro udoskonalennia diahnostyky VIL-infektsii».
8. Nakaz MOZ Ukrainy vid 22.05.2013 № 410 «Pro zatverdzhennia form oblikovoi dokumentatsii ta zvitnosti stosovno reiestratsii vypadkiv kontaktu osib z kroviu chy biolohichnymy materialamy liudyny, zabrudnenymy nymy instrumentariiem, obladnanniam chy predmetamy, provedennia postkontaktnoi profilaktyky VIL-infektsii ta instruktsii shchodo yikh zapovnennia».
9. Nakaz MOZ Ukrainy № 955 vid 05.11.2013 «Pro zatverdzhennia normatyvno-pravovykh aktiv shchodo zakhystu vid zarazhennia VIL-infektsiieiu pry vykonanni profesiinykh oboviazkiv».
10. Nakaz MOZ Ukrainy №148 vid 17.03.2015 «Poriadok pidtverdzhennia zviazku zarazhennia VIL-infektsiieiu z vykonanniam pratsivnykom svoikh profesiinykh oboviazkiv».
11. Nakaz MOZ Ukrainy № 585 vid 10.07.2013 «Pro zatverdzhennia normatyvno-pravovykh aktiv z pytan vdoskonalennia orhanizatsii medychnoi dopomohy liudiam, yaki zhyvut z VIL».

12. Nakaz MOZ Ukrainy № 128 vid 19.03.07. «Pro zatverdzhennia klinichnykh protokoliv nadannia medychnoi dopomohy za spetsialnistiu «Pulmonolohiia». – Kyiv, 2007. – 146s.