



**MEDICAL UNIVERSITY - PLEVEN
FACULTY OF MEDICINE**

DISTANCE LEARNING CENTRE

**DEPARTMENT OF INFECTIOUS DISEASES, EPIDEMIOLOGY,
PARASITOLOGY AND TROPICAL MEDICINE**

**PRACTICAL EXERCISE № 1–
TAKING A HISTORY AND PHYSICAL EXAMINATION OF A
PATIENT WITH INFECTIOUS DISEASE
THESIS**

**FOR E- LEARNING IN INFECTIOUS DISEASES
ENGLISH MEDIUM COURSE OF TRAINING**

SPECIALTY OF MEDICINE

**ACADEMIC DEGREE: MASTER
PROFESSIONAL QUALIFICATION: DOCTOR OF MEDICINE**

**PREPARED BY
ASSOC. PROF. GALYA GANCHEVA**

PRACTICAL EXERCISES – THESES

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I. Aim of the practical exercise – after completed exercise, the students must be able to take informative history and physical examination of patients with infectious diseases, to group symptoms in syndromes, to be familiar with principles of diagnostic management.

II. Tasks for achievement of mentioned above aim:

1. Repetition of basic principles of taking of history.
2. Discussion on specific features of history in infectious pathology.
3. Importance of epidemiological part of history.
4. Information about past history and comorbidity.
5. Repetition of basic principles of taking of physical examination.
6. Discussion about syndromes in infectious pathology and their diagnostic value.

III. Theoretical part of the exercise:

A. History

1. Present history.

The mode of **taking of history** in infectious pathology is such as that in internal medicine. The questions are in the followed order:

- Identifying information – name, middle name, surname, age, sex, nationality, address.
- Patient's profile – occupation, education, marital status, children, life style.
- **Questions about present complaints in chronological order**. It is necessary to specify about: **What is the onset** of the illness – acute or gradual?

Influenza, acute respiratory diseases with viral etiology, exanthematic infectious diseases, salmonellosis, staphylococcal food borne intoxications, cholera, leptospirosis, brucellosis, epidemic typhoid fever, boutonneuse fever, Q-fever, plague, tularemia, louse-borne relapsing fever, Congo-Crimean hemorrhagic fever (CCHF), hemorrhagic fever with renal syndrome (HFRS, i.e. hemorrhagic nephrosonephritis), Dengue fever, Yellow fever, erysipelas, viral hepatitis (flu-like form), and infections of the central nervous system are with acute onset.

Diphtheria, pertussis, botulism, tetanus, anthrax, some forms of the viral hepatitis, and typhoid fever are with graduate onset.

Other questions about the present complaints including:

- about duration, location, progress, character, relation with other complaints.
- Which are the major complaints? – E.g.: The most important symptoms in meningitis are fever, strong headache and vomiting without relief.
- What were the previous treatment and its result?

2. Questions about the past history:

- What was the patient's childhood?
- Did the patient have serious previous illness, (or) injuries, (or) operations, (or) hospitalizations?

Questions about the family history – have relatives with diseases which have hereditary predisposition.

3. Epidemiological history:

- Did the patient have contact with somebody with similar complaints and when was the contact?
- At suspicion for gastrointestinal infection or food born intoxication – what kind of food and when was the consumption? Has/ have or not any other person/ people which had eaten the same food and what is his/ their status? – E.g.: The eggs, milk and meat are products in which the Salmonella species multiplies quickly.
- Did the patient have medical or dentist manipulations: injections, operations, transfusions of blood products, teeth-filling or teeth-extractions, delivery or interruption of a pregnancy; intravenous narcotic's administrations etc.? – Important questions for viral hepatitis type B, C, AIDS.

- Did the patient wade in a river, lake etc. – at suspicion for leptospirosis.
- Presences of rodents (e.g. mice, rats) in home or work place – the rodents are the major vector for transmission of leptospirosis, hemorrhagic fever with renal syndrome (HFRS) etc.
- Did the patient have biting of tick – this is significantly suggesting about Lyme borreliosis, Mediterranean spotted fever, Congo-Crimean hemorrhagic fever (CCHF), tick-born relapsing fever etc.
- Did the patient have biting of dog, cat, fox, bat, e.c. – this fact requires immediately starting of antirabic prevention with specific vaccine.

Information about sexual contacts is important for history of viral hepatitis type B, C, HIV/AIDS and other sexually transmitted diseases.

B. Symptoms of infectious diseases

Fever

The body temperature is measured in degree Centigrade (°C). Normal temperature in axillae ranges from 36,0°C to 37,0°C. Normal rectal temperature ranges from 36,3°C to 37,6°C. In infectious practice usually has been taken the axillar temperature. If the patient's temperature is above normal, it is defined as fever. If the patient's temperature is higher than 38°C, it is defined as high temperature. The temperature from 37°C to 38°C is defined as low-grade.

Nearly all infectious diseases have course with fever. The extremely high temperature has been measured in tetanus – above 42°C. Hypothermia – below 35°C – presents in cholera at late stage of hypovolemic shock. The questions about temperature include:

- What is the temperature during the day – from ... to ... degrees C?
- What is the temperature in every day after the onset of illness?
- If it is possible, to mark a temperature line. Some infectious diseases have specific temperature line, e.g. typhoid fever is with continuous fever.

Chills – the symptom accompanies the fever.

Weakness, functional disability, asthenia, fatigue, general discomfort

Loss of appetite (or anorexia)

Ache – headache, stomachache.

Pain (“Chest pain”, “abdominal pain”): sudden pain; sharp pain; mild, moderate, severe pain; describing of the pain – causative factors, location, type of onset, characteristics, duration, irradiation, effect of medicines on the pain.

Fullness after feeding

Bloated abdomen

Abdominal discomfort

Nausea

Vomiting – approximate number of vomits per day, content, relief after vomiting.

Defecations – approximate number for day, consistence, pathologic admixtures – blood, mucus, pus, undigested food material.

Bleeding – subcutaneous, on the visible mucous membranes, from internal organs (hematemesis, melena, enterorrhagia, hemoptysis, hematuria, metrorrhagia)

Rash – onset, localization, evolution, irritation

E.G.: Evolution of chickenpox's rash is macula → papule → vesicle → (pustule) → crust.

Cough – onset, character (dry or productive), sputum – character (bloody, purulent)

Runny nose

Photophobia

Hyperacusis

Going to urinate and its disorders

C. Physical examination

The physical examination of the patient is important for correct diagnosis. The examination is “from the head to the heels”. A review of the systems has been proven with the four basic physical

methods of investigation – inspection, palpation, percussion and auscultation. The plan of examination includes:

General state of the patient: sex, age, bone and muscular system, body weight, mental status, skin and its color, elasticity, turgor, presence of rash, skin lesions, visible mucous membranes, body temperature, constitution

State of the organs and systems:

- Head
- Cervix
- Lymphoid nodes
- Chest and lungs – form, symmetry, mobility of the chest; type, rate and rhythm of the breathing; character of basic breath's sound in two phases of the breath; additional sounds (wheezes) – crepitations, rales, pleural rub.
- Cardiovascular system – frequency, rhythm and volume of the pulse, heart frequency and rhythm, heart sounds – first and second, heart murmurs and their characterization; blood pressure.
- Abdomen and abdominal viscera: inspection – form, under or below the chest level; skin, subcutaneous veins; visible peristalsis; palpation (superficial and deep) – tender spots, rigid spots, abdominal rigidity; Tu-masse; enlargement of abdominal viscera – hepatomegaly and splenomegaly, hepatic consistence, hepatic tenderness; percussion – tenderness, ascites; auscultation – bowel peristalsis.
- Urogenital system
- Extremities
- Nervous system – neurological examination such as in neurology.

After taking of the history and physical examination the symptoms have been grouped in syndromes.

D. Syndromes of infectious diseases

Intoxication is manifestation of bacterial or viral effect and their toxic products upon central nervous system, vegetative nervous system, cardiovascular system and other organs and systems. It is manifested with fever, chills, headache, muscular pains (myalgia), weakness, and anorexia. There are nausea, vomiting, cardiocirculatory failure etc. This syndrome is not specific and occurs in most all infectious diseases.

Syndrome of cranial hyperemia and conjunctival injection is a result from toxic damage of the upper cervical sympathetic ganglions. It is manifested with considerable hyperemia of the conjunctivas, face, oral mucosa, and hyperemia of the cervical and thoracic (upper part) skin. That syndrome is characteristic for vector-born infectious diseases.

Exanthema (rash) observes in acute febrile infectious diseases with eruption of a skin rash. Most of them are result of blood-born dissemination of an infectious agent, usually viral, or of microbial toxin (at scarlet fever). Similar lesions could be seen in the oral cavity and are defined as enanthema. Two main pathogenic mechanisms are concerning in producing rashes – in the first, damage to skin capillaries provokes erythematous or hemorrhagic rashes. If erythema is marked, red cells may leak out of dilated capillaries and, when erythema fades, may simulate a hemorrhagic rash (e.g. measles). In the second, damage of skin cells usually produces vesicular lesions that typically evolve through macular, papular, vesicular and pustular stages before crusting and healing. Whether a scar will appear depends on the depth of the affected skin.

Lymphadenopathy (lymphadenomegaly)

Infections can cause either localized or generalized lymph node enlargement. Localized lymph node enlargements appear in streptococcal cervical adenitis, Toxoplasmosis, Strophula, tuberculous lymphadenitis, Cat scratch disease, persistent generalized lymphadenopathy (HIV infection), Lymphogranuloma venereal. Generalized lymph node enlargements occur in Infectious mononucleosis, Cytomegalovirus infection, Toxoplasmosis, Rubella, Syphilis, HIV-infection.

Respiratory syndrome includes sore throat, sneezing, decreasing of the smell, cough, and dyspnea. It occurs by “colds”, caused by Rhinoviruses, viruses of the Picornavirus, Myxovirus, Adenovirus and Paramyxovirus. Sore throat occurs in Influenza, Infectious mononucleosis, and Diphtheria. The last infection causes and a croup syndrome.

Cardiovascular syndrome – includes the following symptoms:

- By the history – weakness, fatigue, dyspnea.
- On examination – cyanosis; pallor; edema of the legs; disorders in frequency, rhythm and volume of pulse; on auscultation – heart murmurs; changes in blood pressure. This syndrome occurs in severe forms of infectious diseases.

Hemorrhagic syndrome

It occurs in infectious and non-infectious diseases and often is with a complex genesis. In pathophysiological aspect, hemorrhagic syndrome is determined by presence of coagulopathy, thrombocytopathy and vascular lesions. It occurs in viral hemorrhagic fevers, rickettsial diseases, leptospirosis, most severe forms of viral hepatitis and measles, scarlet fever, diphtheria, sepsis and septic shock. It is manifested by hemorrhagic rashes such as petechial, ecchymosis and purpura and by hemorrhages from viscera such as hematemesis, melena, hemoptysis, hematuria etc.

Gastrointestinal syndrome – it includes disorders of motorial, secretory and reabsorption functions of gastrointestinal tract. It is due to different processes of inflammatory, toxic, allergic and neoplastic origin. It occurs at infectious diseases caused by enteropathogenic bacteria, which belong to three major groups Enterobacteriaceae, Vibrionaceae and Campilobacteriaceae.

Hepato(spleno)megaly – enlargement of the liver and the spleen observes in leptospirosis, relapsing fever, viral hemorrhagic fevers, and viral hepatitis. It is due to inflammatory and toxic damage of both organs.

Jaundice – it is determined by increasing of direct and indirect fraction of serum bilirubin; manifests by darkness of urine, clay colored stools, yellow colored sclera and skin. In infectious pathology jaundice is occurred in viral hepatitis, leptospirosis, Yellow fever, sepsis etc.

Infections of the central nervous system (CNS):

- **Meningitis** is inflammation of the meninges, clinically manifested as the meningeal triad including persistent and severe headache, aggravated by movement; photophobia; neck stiffness due to spasm of the spinal muscles.
- **Meningismus** is the occurrence of signs of meningitis, especially neck stiffness, without abnormalities in the cerebrospinal fluid (CSF). It is particularly common in adults with subarachnoid hemorrhage or in the children with acute febrile illness such as severe pharyngitis.
- **Encephalitis** is inflammation of the brain, which can present with symptoms varying from mild alterations of the consciousness to comma. Encephalitis may to be accompanied by meningitis (meningoencephalitis).

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Prepared by
Assoc. Prof. G. Gancheva, MD, PhD