**Azerbaijan Medical University**

**Department of Dermatovenerology**

**Practical lesson number 3 (dermatology)**

**Bacterial dermatoses (Cutaneous tuberculosis, Leprosy). Cutaneous leishmaniasis.**

*Epidemiology. Etiopathogenesis. Clinical and pathomorphological manifestations. Diagnostics. Differential diagnosis. Treatment and prevention.*

1. Give a definition of skin tuberculosis.

ICD-10: A18.4 Tuberculosis of the skin (Cutaneous tuberculosis) is a chronic bacterial infection of the skin and mucous membranes caused by *Mycobacterium tuberculosis,* characterized by a variety of clinical manifestations and the formation of specific granulomas in the skin.

2. Indicate the causative agent of skin tuberculosis.

The causative agent of skin tuberculosis is Mycobacterium tuberculosis, a gram-positive aerobe, a representative of the genus Mycobacterium, which contains mycolic acid in the structure.

3. Indicate what type of mycobacteria causes skin tuberculosis in humans.

In foci of tuberculosis of the skin, mycobacteria of the human type (typ.humanus) are most often found, less often - of the bovine type (typ.bovinus) and extremely rarely - of the avian type (typ.avis).

4. Indicate the source and routes of transmission of infection incutaneous tuberculosis.

The source of infection is a sick person, infected livestock.

Ways of transmission - exogenous, endogenous, along the length (per continuitatum), autoinoculation.

5. Specify the test that is used to diagnose tuberculosis.

Mantoux test - intradermal tuberculin injection - 2TE.

6. Specify the classification of skin tuberculosis.

1.Tuberculosis of the skin, primary (Tuberculosis cutis primaria), which developed in previously uninfected persons.

2. Tuberculosis of the skin (Tuberculosis cutis), which developed in previously infected individuals.

Local forms

● tuberculous lupus (lupus vulgaris)

● colliquative tuberculosis syn. scrofuloderma (tuberculosis colliqvativa sin.scrofuloderma)

● warty tuberculosis (tuberculosis verrucosa)

● miliary ulcerative tuberculosis (tuberculosis miliaris ulcerosa)

Disseminated forms

● papulonecrotic tuberculosis (tuberculosis papula necrotica)

● inductive tuberculosis (tuberculosis indurativa)

● lichenoid tuberculosis syn. lichen scrofulous (tuberculosis lichenoides sin.lichen scrofulosorum)

● miliary disseminated tuberculosis of the face (tuberculosis miliaris disseminatus faciei)

7. List the eruptive elements characteristic for cutaneous tuberculosis.

For cutaneous tuberculosis lesions of *nodules (papules)* are noted - lupus vulgaris, verrucous tuberculosis, miliary ulcerative tuberculosis, papulonecrotic tuberculosis, lichenoid tuberculosis, miliary lupus erythematosus and *nodus*-colliquative tuberculosis, indurative tuberculosis.

8. Specify the characteristic clinical signs of a tuberculous tubercle (nodule).

Tuberculous *nodules (papules)* are round in shape, soft consistency, prone to fusion, depending on the form of tuberculosis of the skin - different sizes and colors from pale pink, brownish red to brownish. With diascopy of the nodules, their color changes to yellowish - "a symptom of apple jelly", and when pressing with a probe, pain and failure of the probe are noted - a "symptom of a probe". In the process of resolving the tubercles (nodules), ulcers with undermined edges are formed, ending in a scar.

9. Describe the pathomorphological manifestations of skin tuberculosis.

In the dermis, a granuloma is formed from eptelioid cells surrounded by lymphocytes, characterized by the presence of giant Langhans cells and caseous necrosis in the center.

10. Specify ways of preventing skin tuberculosis.

Early detection, registration and adequate treatment of patients. For the purpose of prevention, the population is vaccinated with the BCG vaccine (BCG-Bacille de Calmette et de Guerin) - a live anti-tuberculosis vaccine from an attenuated strain of M. tuberculosis.

11. Note the basis on which the diagnosis of skin tuberculosis is based.

The diagnosis of tuberculosis of the skin is established on the basis of anamnesis, the result of a tuberculin test, as well as a clinical and pathomorphological picture. The PCR method allows the identification of M. tuberculosis DNA in damaged tissues.

12. Specify the essence of the Mantoux test and the criteria for its assessment.

The Mantoux test (tuberculin test) is a diagnostic test for the infection of the body with Mycobacterium tuberculosis. The Mantoux test is performed by intradermal injection of 2TU tuberculin and is assessed after 72 hours. *Negative result* - no infiltration or prick reaction; *dubious result* - the presence of papules with a diameter of 2-4 mm; *positive result* - the presence of papules with a diameter of 5 mm or more.

13. List the diseases with which skin tuberculosis is differentiated.

Discoid lupus erythematosus, cutaneous leishmaniasis, leprosy, syphilis.

14. Name the drugs that are used to treat skin tuberculosis.

● Drugs of high efficiency: isoniazid (tubazid), rifampicin.

● Medium effective drugs: ethambutol, prothionamide, pyrazinamide, streptomycin, kanamycin.

● Drugs of moderate effectiveness: PASA (para-aminosalicylic acid), tibon.

15. Give the definition of **Leprosy**.

ICD-10: A30 Lepra, syn. Hansen's disease (Leprosy, sin. Hansens disease) is a chronic bacterial infection caused by mycobacterium leprosy, characterized by lesions of the skin, mucous membranes, characterized by damage to the skin, mucous membranes, peripheral nervous system and internal organs.

16. Identify the causative agent of Leprosy.

The causative agent of leprosy, Mycobacterium lepra, is a gram-positive aerobic, has a tropism to peripheral nerves.

17. Indicate the source of infection and the route of transmission of infection in leprosy.

The source of infection is an infected person.

Transmission routes - airborne, possible transdermal, transmissive.

18. List the classification of leprosy.

There are 2 classifications of leprosy: Madrid and Ridley-Jopling.

According to the Madrid classification, there are 2 polar types of leprosy - lepromatous and tuberculoid and 2 intermediate types: undifferentiated (dimorphic) and borderline.

According to the Ridley-Jopling classification, there are:

TTp-polar tuberculoid type of leprosy

TTS-subpolar tuberculoid type

PT-borderline tuberculoid type

PP-borderline leprosy

PL-borderline lepromatous type

LTc-subpolar lepromatous type

LTP-polar lepromatous type

19. Give a characteristic of the lepromatous type of leprosy.

Relatively severe course of the disease, high contagiousness, negative lepromine test, a large amount of M. leprae in the affected areas, early involvement in the process of mucous membranes and internal organs, later involvement of the peripheral nervous system. Numerous elements up to 10-100 or more appear on the skin (erythematous-pigmented spots, nodules / tubercles / plaques, nodes), small (less than 2 cm in diameter), with indistinct contours, symmetrical, resolving with the formation of secondary dyschromic spots, ulcers, scars. Later loss of sensitivity, sebum secretion and sweating are disturbed, vellus / bristly hair falls out.

20. Give the characteristics of the tuberculoid type of leprosy.

A relatively mild course of the disease, weak contagiousness, a positive lepromine test, early involvement of the peripheral nervous system in the process, M. leprae in the lesions, as a rule, are not detected. Few, up to 1-10 elements appear on the skin (erythematous-hypopigmented spots, papules / tubercles / plaques, nodes), large (more than 5 cm in diameter), clearly delineated, asymmetric, resolving with the formation of secondary achromic spots, sometimes cicatricial atrophy. Sensitivity, sebum and sweating are disturbed early, vellus / bristly hair falls out.

21. Describe the pathomorphological manifestations of leprosy.

In the dermis, a granuloma is formed from epithelioid and giant multinucleated cells surrounded by lymphocytes. M.leprae is found in fresh leprosy foci.

22. List with what diseases leprosy is differentiated.

Cutaneous leishmaniasis, skin tuberculosis, seborrheic eczema, mycoses, vitiligo, syphilis.

23. Indicate the methods of laboratory diagnosis of leprosy.

● bacterioscopic / microscopic

The material for the study is scraping from the mucous membrane of the nasal septum and from dissected tissues. Also, scarificates from the lobes of the auricles, chin, brow ridges, and distal extremities are used as a diagnostic material.

● PCR - identification of M. leprae DNA in affected tissues

● lepromine test

● pathomorphological examination

24. List methods of prevention of leprosy.

Early detection, registration and adequate treatment of patients; isolation of patients with a positive lepromine test; compliance with sanitary and hygienic rules; control of persons in contact with patients; if necessary, in patients with a negative lepromin test, preventive treatment is carried out.

25. Indicate methods of treatment for leprosy.

Treatment of leprosy is complex, carried out with systemic antibacterial drugs rifampicin, clofazimine (lampren), dapsone.

26. Give the definition of **Cutaneous Leishmaniasis**.

ICD-10: B55.1 Cutaneous leishmaniasis (Leishmaniosis cutis) is a transmissible infectious disease endemic to regions with hot climates, caused by parasitic protozoa of the genus Leishmania.

27. Give the characteristics of the causative agent of cutaneous leishmaniasis.

The causative agent of leishmaniasis - Leishmania - belongs to the parasitic protozoa (Protozoa). There are 2 forms of Leischmania: L.tropica major and L.tropica minor.

28. Indicate the source of infection, vectors and route of transmission of cutaneous leishmaniasis.

Sources of infection - infected people and animals (rodents: mice, rats, hedgehogs, gophers, gerbils, as well as - wolves and dogs)

Carriers of the infection are female mosquitoes of the genus Phlebotomus (Old World), Lutzomyia and Psychodopygus (New World).

Route of transmission - infection occurs when a healthy person / animal is bitten by an infected mosquito.

29. Note which species of Leishmania causes cutaneous leishmaniasis in Azerbaijan.

In Azerbaijan, an endemic zone of cutaneous leishmaniasis, the disease is caused by 2 species of Leishmania: L.tropica major and L.tropica minor.

L.tropica major causes the zoonotic type (rural) of the disease, lives and parasitizes on animals.

L.tropica minor causes anthroponous type (urban) of skin leishmaniasis, parasitizes on humans.

30. Give the clinical characteristics of the rural type of cutaneous leishmaniasis.

Rural (zoonotic) type - at the site of the bite, single, rarely multiple nodules / tubercles (leishmaniomas) appear, bright red, rounded, 0.2-0.5 cm in size.After 3-5 days, the nodule increases in size to 2,0 cm, turns into a boil-like knot of a doughy consistency. Central leishmanioma necrosis begins after 1-3 weeks, which lasts 1-3 months. As the necrotic masses are cleared, a crater-shaped ulcer is formed. After 2-5 months, the ulcer is scarred with the formation of a retracted scar.

31. Give the clinical characteristics of the urban type of cutaneous leishmaniasis.

Urban (anthroponous) type - a papule / tubercle is formed at the site of the bite, dark red, rounded with a smooth surface, 0.1-0.2 cm in size. After 3-6 months, the papule reaches 2.0 cm in size. In the center of the papule, a crater-shaped depression is formed, filled with horny crusts, under which healing occurs, or crusts are rejected, exposing a superficial ulcer. After 6-12 months, the process ends with the formation of a scar.

32. Make a differential diagnosis of urban and rural types of cutaneous leishmaniasis.

The rural type is characterized by seasonality associated with the vital activity of mosquitoes in the warm season (May-September). Mainly the lower limbs are affected. The incubation period is 1-5 weeks, the duration of the disease is 3-6 months.

The urban type is not associated with seasonality. The face is more often affected, less often the lower extremities. The incubation period lasts an average of 3-6 months, sometimes 1-2 years. The disease is characterized by a long course.

33. List the atypical forms of cutaneous leishmaniasis Tuberculoid, abortive.

34. List the diseases with which cutaneous leishmaniasis is differentiated (Borovsky's disease).

● leprosy - loss of sensitivity in the lesions is characteristic

● tuberculosis of the skin - characterized by positive symptoms of "apple jelly", "probe", positive tuberculin test, with pathomorphological examination - granuloma from epithelioid cells, lymphocytes and Langhans cells

●furuncle / carbuncle - characterized by an acute onset, purulent core, soreness.

35. Note what the diagnosis of cutaneous leishmaniasis is based on.

● clinical picture

● anamnestic data on the stay of patients in endemic areas

● cytological examination - detection of Leischmania in smears-prints.

● PCR-confirms the diagnosis of leishmaniasis and allows to differentiate different types of Leischmania

36. What is the chemotherapy method for the treatment of cutaneous leishmaniasis?

The drug of choice for the chemotherapeutic method of treatment is the pentavalent antimony drug (sodium spitogluconate or meglomine antimoniate) - glucantim, which is administered intramuscularly or used for intralesional administration. Second-line drugs are pentamidine, amphotericin B, metronidazole, itraconazole, ketaconazole, chloroquine.

37. Indicate the destructive methods of treatment of cutaneous leishmaniasis.

Laser-electro-cryodestruction.

38. What are the methods of prevention of cutaneous leishmaniasis?

Timely detection and treatment of patients, the use of personal protective equipment against mosquitoes in endemic areas, disinfection of houses and utility rooms with insecticides are of great importance.