Term	Topic content
Syphilis	*(syphilis), synonym, lues* - is a chronic systemic infectious disease with a rhythmical undulating variable course, which is predominantly transmitted sexually and which affects all organs and systems of human body.
Etiology	Syphilis is caused by Treponema pallidum (Treponema pallidum), belonging to the class of Spirochaetales, family of Treponemaceae, genus of Treponema. It received its name because of a very poor ability to paint. Treponema pallidum has the form of a thin spiral of width of 0.2 jim and a length of 5-15 urn. Its 8- 12 curls are placed at the same distance from each other. They are very mobile and constantly carry out sliding (forward and backward), rotational, pendulum and contractile (wavy) movements. The small number of surface antigens (protein, polysaccharide, lipid) in Treponema pallidum determines its weak immunogenicity and helps to quite successfully counteract antibodies and lymphocytes of the human body. As facultative anaerobes Treponema pallidum finds the optimal conditions for its location and development in the lymphatic system. Treponema pallidum is unstable to drying and high temperature (at 55 °C it dies after 15-20 min.). The optimum temperature for its existence is +37 °C.
Epidemiology	Syphilitic infection occurs only in humans. According to the WHO estimates (eng - WHO) about 15 million people in the world are infected with syphilis each year. Today, the disease is considered by experts as well as a co-factor contributing to HIV - infection. Sources of infection. The source of infection is the sick person, especially with infectious (active) manifestations of primary and secondary syphilis. Ways of infection. There are three main ways of infection with syphilis: *sexual* - in case of genital, anal and oral contacts; *professional* - during surgery, instrumental examination; *transfusion way* - in the case of a direct penetration of Treponema pallidum in the blood, particularly during blood transfusions, medical manipulations (cutting, an injection during surgery).

	transplacental-from sick pregnant woman to the fetus through the placenta. Immunity True (sterile) or artificial immunity in case of syphilis in human does not exist, as there is no natural immunity. After infection only unsterile (infectious) immunity gradually develops, which is caused by an allergic changes in the body as a result of the disease-causing agent in it. When recovering infectious immunity disappears. *Reinfection* - is recurrent disease of syphilis in human who had previously been sick with it, and did not fully recover from it, that manifested itself as the absence of any clinical symptoms, and persistent negative reaction of such person in all serological tests.
General course of syphilis and its classification	Syphilis infection is characterized by the cyclical type of clinical course which is manifested by a certain sequence of occurrence of the external symptoms, the change of periods of active and latent clinical course. In the clinical course of syphilis infection the following periods and forms are defined: *1. Incubation period*- from the moment of infection to appearance of the hard chancre. *2. Primary period (syphilis Iprimarid)* - stage of the disease from the moment of appearance of hard chancre to the development of secondary syphilides. It consists of: *seronegative (syphilis I seronegativa)* syphilis with persistently negative serological reactions in the presence of clinical symptoms; *seropositive (syphilis I seropositiva)* syphilis with positive serological reactions in the presence of clinical symptoms; *latent (suphilis I latens)* syphilis, which is characterized by the absence of specific clinical manifestations in patients. *3. Secondary period (syphilis II secundaria)* stage of the disease, which is characterized by polymorphic rash (papules, macules, pustules) on the skin and mucous membranes and their determined staging, namely • *secondary recent syphilis (syphilis II recens)* - period, characterized by numerous polymorphic eruptions on the skin and mucous membranes, polyadenitis, the presence of residual symptoms of the hard chancre and strongly positive serological reactions;

	secondary recurrent syphilis (syphilis II recediva) period of secondary syphilis characterized by a small polymorphic grouped rash; *secondary latent syphilis (syphilis II latens)* - period of the disease, which is clinically latent and manifested only by positive serological reactions. *Third syphilis (syphilis HI tertiaria)* - stage, characterized by the damage of internal organs and nervous system. *Latent syphilis (syphilis latens).* The latent syphilis includes such cases of syphilis infection, in which serological reactions are positive, but there are no clinical signs. The following variants are possible: *premature latent syphilis* (syphilis latens praecox), when less than two years passed from the moment of infection, *tardive latent syphilis* (syphilis latens tarba), when two years and more passed from the moment of infection, *unspecified latent syphilis* (syphilis ignorata), when the period of infection can not be specified. *Congenital syphilis (syphilis congenita)* occurs when infection with Treponema pallidum is caused by ill mother in the period of intrauterine growth. It iscustomary to distinguish the following types: *premature congenital syphilis (syphilis congenita praecox)* - syphilis of fetus and of children up to two years; *tardive congenital syphilis (syphilis congenita tarda)* in children older than two years; a *latent congenital syphilis (syphilis congenita latens)*, in case of which the clinical manifestations are absent, and laboratory parameters of cerebrospinal fluid are normal. *Syphilis of nervous system (neurosyphilis).*
General principles of diagnostics	Diagnostics of syphilis is based on: the presence of specific clinical manifestations on the skin and mucous membranes; the history data sexual contacts; the positive results of laboratory tests. If the rash elements that are not accompanied by subjective sensations are present on the skin, genitals and mucous membranes, one should think that it may be manifestations of syphilitic lesions. It is desirable to establish a patient's sexual contacts over the past few months. Spectrum of laboratory methods for diagnosis of syphilis is composed

	of the direct tests that detect causative agent of syphilis, or its DNA or of the large number of indirect mainly serological methods of studies.
Secondary period of syphilis	Secondary period of syphilis *(syphilis II secundaria)* - stage of the disease, which is caused by hematogenous spread of Treponema pallidum from the place of primary focus throughout the body, which is characterized by polymorphic rash (spots, papules, pustules) on the skin and mucous membranes, and determined staging of the clinical course and the possible affection of the internal organs and the nervous system. **Clinical picture.** Secondary period of syphilis begins when the hematogenous generalization of syphilitic infection is being realized. This usually occurs in 9-10 weeks after infection with Treponema pallidum or 6-7 weeks after the appearance of hard chancre. The appearance of skin rash indicates the beginning of the secondary period of syphilis. At this time roseolous rash appears on the skin and mucous membranes. *General features of clinical course of the secondary period:* absence of subjective feelings and violation of the general condition of the patient; rash is highly contagious; the clinical manifestations are resolved independently without treatment; total duration of secondary syphilis - 2-4 years; all serological reactions are strongly positive; rash is presented by macular, papular, pustular and pigmented syphilides (true polymorphism), as well as syphilitic alopecia; rash does not occur simultaneously, but jerky, that is, within 2-3 weeks, and is at different stages of evolution (false polymorphism) in case of regression; rash is not acute inflammatory, its color is pale pink or brownish. Most often at the beginning of second period (secondary recent syphilis) abundant roseolous rash appears, which is often polymorphic (roseola, papules), and is not prone to merge. The rash is symmetrical. Some have ulcerative hard chancre or the signs of primary syphiloma (pigmented secondary macule either fresh scar) and scleradenitis. After 1-2.5 months rash fades and only the positive serological reactions remain, secondary latent period begins. Later relapse of clinical manifestations of the disease with a very varied course occurs secondary recurrent period. Unlike the secondary recent syphilis, there is less eruptions on the skin at this stage of disease, they are larger, tend to group, are paler, more often located

	in large folds of skin, in trauma places, in areas with increased sweating; polyadenitis does not almost happen. Serological tests of blood are positive in 98% of patients, although the titer of Wasserman reaction is lower than in secondary recent syphilis. There are cases of lesions of the internal organs, the nervous and endocrine systems, sensory organs, bones, joints. *Roseolous syphilide* - most typical rash in case of secondary recent syphilis. It is placed symmetrically on the side of the chest, abdomen, back, front surface of the upper extremities and hips. The rash is multiple and focused. The color of roseolas varies from pink to yellow-brown. Roseolas are round with a diameter of 8-12 mm, not shelled, they do not itch and disappear at diascopy. They become more visible after intramuscular injection of penicillin (Jarish-Herxhimer reaction). Without treatment they exist for about 3-4 weeks, and then disappear. They are rare on the palms and soles, as well as on the face. In case of secondary recurrent syphilis roseolas are larger, but not so bright, often spherical, tend to group, their quality is not large. *Differential diagnostics of roseolous syphilide*. During the differential diagnostics one should exclude macular rash in some infectious diseases, which are accompanied by severe general condition, high body temperature, conjunctivitis, enantemy, laryngitis, tracheitis, bronchitis. ***Papular syphilide*** may be also in the secondary recent syphilis, but the appearance of papules is more characteristic of secondary recurrent syphilis. In the case of secondary recurrent syphilis the number of papules is smaller, they tend t° group together and are found on the palms and soles. Papules size varies from 2 mm (lenticular syphilide) to 12 mm (nummular syphilide). Hypertrophic papules – *wide condylomas* appear in the places of constant friction (in the folds, on the genitals). Typical signs of syphilitic papules: color is red or copper-red; dense, round; are mostly located isolated from each other; clearly localized from the surrounding skin, without inflammatory crown around the edge; cause no subjective feelings; in case of regression of papules, a kind of peeling, which starts from the center and extends to the periphery, leaving a Biett's horn- crown - collar is observed; sometimes the well-defined papules resembling corn are observed on the palms and soles; under the influence of maceration and friction, lenticular papules placed on the external genitals and skin folds grow and become moist and erosive. These papules are most contagious; due to irritation of the bottom of the erosive papules, vegetation wide condylomas of pale pink color, resembling a cauliflower, gradually

develop.

Differential diagnostics of papular syphilides. Syphilitic papules should be differentiated from papular rash at various dermatoses: *psoriasis, lichen planus, parapsoriasis, molluscum contagiosum* and other.

Wide syphilitic condylomas shall be distinguished from: *pointed condylomas, hemorrhoidal varicose veins,* eruptions in case of *vegetating acantholytic pemphigus.*

Pustular syphilide is observed rarer. Unlike true pustules, a swab of the infiltrate, not acute inflammatory rim is placed at the periphery. Depending on the symptoms they distinguish syphilitic impetigo, acneiform syphilides (syphilitic black- heads), varioliform syphilide, syphilitic ecthyma, syphilitic rupias. Their form depends on the location of eruptions, elements size, the degree of their decomposition.

Differential diagnostics of pustular syphilide. During the differential diagnostics of syphilitic ecthyma with pyoderma one shall consider the lack of an inflammatory rim and normal pustulation, presence of the red-bluish dense infiltrative swab at the periphery, which did not break up, the presence of other symptoms of syphilis, as well as data of clinical history and confrontation.

Pigmented syphilide *(syphilitic leukoderma)* is observed in the secondary recurrent syphilis. It is vaguely demarcated, incompletely hypopigmented leukoderma. It occurs in patients who have darkly pigmented skin. Leucoderma firmly holds and disappears within 6-12 months, and sometimes even within 1.5-2 years even with the full treatment, it is often combined with syphilitic alopecia.

Differential diagnostics of pigmented syphilide. Differential diagnostics should be carried out with the secondary leucoderma after psoriasis, parapsoriasis, seborrhea, versicolor tinea. In case of all these pathologies first of all a rash appears on the skin, and change in pigmentation is a direct consequence of its evolution. In addition, serological tests for all of these pathologies are negative.

Syphilitic alopecia is observed in the secondary recurrent syphilis. Six

	months after infection, multiple patches of hair loss of 5mm to 20 mm in diameter appear and spread gradually on the entire scalp. There are three types of alopecia *fine focal, diffuse and mixed.* It appears suddenly and progresses rapidly. It often affects the frontal-parietal and occipital areas. Hair recover and grow in 1 -2 months after resolution of infiltrates. *Differential diagnostics of syphilitic alopecia.* It should be differentiated from alopecia areata. ***Syphilides of mucous membranes*** are common in patients with secondary syphilis and are sometimes the only obvious symptom of this disease. Rash is macerated and eroded, and highly infectious. It affects the mucous of lips, cheeks, tongue, throat, vocal cords, straight intestine, female genitals. areas. Roseolous syphilides on the oral mucosa present circular red-bluish clearly delineated formations of small size - 0.5-0.7 cm. They do. not cause subjective feelings, disappear without a trace. They often affect the tonsils, the front and rear handles, the tongue and soft palate (syphilitic erythematous angina) or larynx (syphilitic erythematous laryngitis). The most common manifestations of secondary syphilis on the mucous membranes include papular rash - flat, well-demarcated, with no peripheral inflammatory rim, of deep red color, it usually does not bother the patient. *Differential diagnostics of syphilides of mucous membranes.* Ona shall differentiate papular syphilitic angina along with such diseases angina, diphtheria, lichen ruber planus, ulcerative stomatitis, flat leukokeratosis. Standard angina is accompanied by increased body temperature, rapid swelling and hyperemia of the throat, tonsils, handles, soft palate, indeterminate limits of affection, great soreness.