

Ministry of Health of Ukraine
Poltava State Medical University
Department of internal medicine No 3 with phthisiology

Approved
at the meeting of the Department of Internal
Medicine No. 3 with Phthisiology
Protocol № _____
"__" _____ 20____ p.
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Methodical instructions
for the independent work of students
during the preparation for a practical lesson and in class

Academic discipline	Phthisiology
Module №	1
Theme of the lesson 13	Tuberculosis of lungs in combination with other diseases: clinic, diagnosis, features of the course and treatment. Curation of patients.
Course	4
Faculty	International
Specialty	Medicine

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1. Specific objectives:

To analyze: frequency of combination of TB with other diseases.

To explain: features of motion of TB are with other diseases.

To offer: ways of diminishing of morbidity of TB are with the combined pathology.

To classify: groups of clinical account.

To interpret: risk groups are in relation to development of TB.

To draw: chart of structure of ant tuberculosis service of Ukraine, structure of ant tuberculosis dispensary.

To analyze: organization exposures sick on TB through an in-medical network.

To make: plan of work of district phthisiologist.

2. Base knowledge, abilities, skills, are necessary for study themes (interdisciplinary integration)

Names of previous disciplines	Skills are got
Anatomy	To know the structure of lungs, partial and segmental
Physiology	To know the function of lungs. Able to interpret a spirogram
Pathanatomy	To know character of TB of inflammation, structure of TB of granule
Pathphysiology	To know possible parafunctions lungs. Able to find out pathological changes on a spirogram
Radio-therapy	To know the projection of lobar, segments of lungs on x-ray tape. X-ray signs of TB of lungs.
Microbiology	To know the pathogenic cultures of MBT for a man, feature of structure of MBT, property.
Propedevtics of internal illnesses	Able to collect complaints, anamnesis of disease and life, conduct the objective inspection of patient (review, palpation, percussion, auscultation).
Pharmacology	To know a pharmacokinetics, pharmacodynamics of ATP. Testimony, contra-indication. .
Hygiene	To know governed in-hygienically mode, which a patient and doctor, persons which are in a contact with a patient on TB must adhere to.
Faculty therapy	To know the clinical picture of other diseases (to pneumonia, bronchitis).
Endocrinology	To know ran across saccharine diabetes (CD). Hormonal alteration in the organism of expectant mother.
Oncology	To know the clinical picture of shrine of lungs.

3. Organization the content of the training material:

1. COMBINED TB OF LUNG WITH PROFESSIONAL DUSTBORNE DISEASES

Before the dust borne professional diseases of lungs (pneumoconiosis) take the diffuse defeats of lungs as a result of breathing in a dust that characterized a widespread interstitial sclerosis and knot pouring out.

Coniotuberculosis – the clinical form of TB of lungs is combined from professional dust borne diseases from which more frequent all there is combination of silicosis from TB (silicotuberculosis). A silicosis, as a rule, comes forward a primary disease, develops at breathing in a dust which contains a free silicic. It is the most widespread variety of pneumoconiosis in mining,

machine-building industry, castings workshops and other. Among the contingents of clinical account is 1-1,5%.

A silicotuberculosis develops at combination of silicosis from TB that is why peculiar lines him, to both the silicosis and TB, but simultaneously this new disease with original pathomorphological, clinical and x-ray signs. Frequency of development of TB makes at the interstitial form (I item) of silicosis – 10-20%, at a knot form (II item) – 20-60% and at the knotted form (III item) – 60-80%.

Pathomorfogenesis. A silicotuberculosis develops at cooperation of two etiologic factors – free silicic dust and MBT. Each of two diseases the unfavorable influences on motion other. Mainly active TB develops on a background the already formed silicosis. Often TB joins in with a silicosis in 15-20 years.

The most frequent TB for patients with a silicosis develops as second as a result of the repeated infecting or reactivation of endogenous infection the source of which more frequent all are old apex hearths or old TB of the impression of lymphatic knots. Their activating is stipulated by pollination of lungs of dioxides silicon, which, dissolving in the liquids of tissue, causes mushroom growth of connecting tissues and development of pneumon fibrosis, that is accompanied narrowing and obliteration of blood and lymphatic vessels, ant tuberculosis defense of the bronco-pulmonary system goes down as a result. MBT spread lympho-bronchogenic ways, stipulating the impression of large bronchial tubes and forming of lymph-nodular fistulas. Distribution of MBT can take a place the retrograde current of lymph from in thoracic lymphatic knots to the eventual structures of lights, forming the specific impressions.

In silicotuberculosis educations there is specific granulation tissue, caseous necrosis, a lot of collagen fibers, silicotic granulom. Combinations of silicosis and TB confirm the results of histological research of TB of the impressions, when in the hearths of TB and in the walls of cavities find a silicosis dust. Out lungs TB at a silicosis does not almost meet.

Select different forms a silicotuberculosis: focal, infiltration, silicotuberculoma, dissemination, fibrous-cavern TB. For patients with a tuberculosilicosis in thoracic lymphatic knots are always staggered.

Clinic. In clinical motion of tuberculosilicosis, regardless of form, select two phases: torpid and phase of progress.

Torpid a phase is characterized the satisfactory state of patient, complaints is, temperature of body and indexes of hemogram within the limits of norm. Tuberculin the test of Mantua is positive, can be hyperergic. MBT in sputum does not find. Diagnose TB only from data of x-ray inspection as compared to previous results. The provocative tuberculin test of Koch is rotined from 20 TU PPD.

The phase of progress of silicotuberculosis is characterized appearance of symptoms of intoxication (fervescence, perspire, weakness, fatigue, worsening of appetite, by the loss of mass of body and others like that), strengthening of cough, increase of sputum, growth of shortness of breath, stethalgia. Percussion a sound is dulled. At auscultation on a background weakening of the vesicular breathing hearken to the dry wheezes, sometimes are local moist wheezes. In hemogram there is leucocytosis, lymphopenia, increase of RSE. In sputum sometimes find typical of MBT. From data of professor B.V.Noreyko (1998) 50% patients with a silicosis are selected L-формы of MBT, which testifies to the necessity them the special inspection.

Diagnostics. For diagnostics of silicotuberculosis information have a primary value about labour of patient in the conditions of enhanceable dusty (mineries, mines, stone careers).

A sensitiveness to the tuberculin for patients with a silicosis is saved, and appearance of hyperergic reaction can testify to tacking to the silicosis of TB of process.

For patients with a silicotuberculosis the function of the external breathing is mionectic. At the protracted motion of process vessels are struck, hypertensive develops in the small circle of circulation of blood, chronic pulmonary heart with typical for him EKG-signs.

A large value in diagnostics of silicotuberculosis has an x-ray inspection of patient; when on a background silicosis find out the different clinical forms of pulmonary TB (focal, infiltration, silicotuberculoma, dissemination).

Roentgenologic distinguish 3 stages of silicosis:

1 stage is strengthening and deformation lungs a picture, single focal shads 2-4 mm in a diameter with wrong contours, placed below from collar-bones, mainly in the cortical departments of lungs, insignificant bulges of pleura, compact scolded.

II stage – a pulmonary picture is not differentiated, silicotic knots much, they spread on all of departments of lungs, alternate with emphasematic changes.

III stage – hearths meet, forming the massive fibrosis fields, conglomerates. The scolded is «chopped» off by virtue of those silicosis hearths of overlap shade of large vascular barrels which walk away from a root.

In II-III the stages at times find out calcinated on the edges of lymphatic knots on the type of «egg-shell». More frequent these changes find at combination of silicosis from TB.

Select the interstitial form of silicosis, at which fibrosis changes prevail in lungs without obvious knot shad, also.

Focal a tuberculosilicosis makes ~ 70% cases of combination of TB and interstitial form of silicosis. Find out patients at prophylactic fluorographic after the changes of x-ray picture, when on a background pneumophibrous and asymmetries of lungs at first in right, and then and in left lungs (S2-1) the focal shads of different size and intensity, located on different distances one from the second, appear. Unlike TB of focal shads of silicosis knots more shallow and more intensive.

An infiltration tuberculosilicosis is characterized an origin in lungs of the infiltration darkening of small or middle intensity, with unequal, unclear contours, what differ from the silicosis impressions of lungs. Localized more frequent in 2, 6 or 8 segments. TB develops on a background the silicosis of I-II of the stage. Forming of cavities is possible.

Dissemination a silicouberculosis is characterized appearance of the focal darkenings of different size and intensity, without clear contours, mainly in overhead particles, diminishing downwards, show a tendency to confluence. It is combined with the silicosis of I-II of the stage.

Silikotuberkulemes develop from focal, infiltration and rarely from dissemination TB, forming caseous focus in which find the dust of silicon. X-ray find out the focal shads of middle intensity, with clear contours which are localized mainly in the overhead particles of lungs, sometimes in an 8 segment. It is more frequent combined with the silicosis of the II stage. Silikotuberkulem can arrive at sizes 5 cm in a diameter. If they anymore is a conglomerate silikotuberculosis.

A destructive silikotuberculosis is characterized formation of cavities in silikotuberculosis conglomerates and is the sign of progress of the forms of silikotuberculosis described higher. It is often combined with the silicosis of the III stage. At the terms of the undulating motion protracted, with the periods of remiss and sharpening and permanent secreting MBT, diagnose a fibrous-cavern silikotuberculosis.

Silikotuberkular bronchio-adenitis is characterized the extended and compression roots of lungs, megascopic in thoracic lymphatic knots which have calcinated to contoured with disseminations of lime in the middle of knot for as a «egg-shell» Is combined with the silicosis of I-II of the stage.

The diagnosis of silicosis puts prophpathologist. Structure of clinical diagnosis: silikotuberculosis, silicosis (in accordance with the certificate of prophpathologist) and TB (in accordance with classification).

Treatment of silikotuberculosis must be intensive and more protracted, than at not complication TB after a category 1 (FDTB) or 4 (KHTB). On background silicotic changes, vascularizing is broken and penetration of ATP is laboured in the staggered TB of area which slows the processes of cicatrisation. Therefore the basic course of chemotherapy must last not less than year. Treatments begin ATP from category 1, 3, 4. Apply intravenous or endobronchial introduction of ATP. At forms which make progress quickly, with respiratory insufficiency or at by-reactions on ATP, appoint corticosteroid after a chart.

Surgical interference is possible only in rare cases at silikotuberculom or to the limited fibrous-cavern TB of lungs on a background the initial stages of silicosis.

2. TB IN PATIENTS WITH HIV/AIDS

Hasty growth of prevalence of HIV-infection in many countries of the world becomes a problem in an exposure and treatment of TB. This process also complicates a fight from TB.

AIDS (Acquired ImmunoDeficiency syndrome). HIV (Human ImmunoDeficiency Virus). In countries with high prevalence of TB, as a rule, 30-60% grown man population MBT is infected. The immune system of greater part of people at infecting of MBT is able independently to protect an organism from development of TB. But if immunity is low-spirited an action HIV, then MBT begin to propagate oneself, and subsequent development of TB can not be shut-down. The same way people with HIV-infection, even if they are yet not patients, not capable to offer resistance the

new infection of MBT. In this connection it is possible to assume enhance able prevalence of TB in those countries, where the number of HIV-infection grows.

HIV-infection is a disease, which develops as a result of the protracted persistent virus of immunodeficit of man in lymphocytes, macrophages. The amount of infected in the world of people is doubled each 10-14 months HIV-infected is a group of enhance able risk, in which in 8-14% diagnose TB. Morbidity in their 74 is times exceeded by this index among the population of Ukraine.

AIDS is a syndrome of the purchased immunodeficit, last stage of the prolonged viral infection, runs across with the defeat of the immune and nervous system, is development of heavy viral, bacterial, parasitizes and malignant new formations, that results in a lethal end. For patients on TV it is found out AIDS in 66 times more frequent than among a population.

The first information about a disease appeared at 1981p. In 1983 p. the virus of immune deficit of man was selected (AIDS). The ways of transmission were afterwards set: through blood and by a sexual way. The virus contained in all of liquids of organism – spinal, saliva, sweat, milk.

Distribution of disease was begun with Africa – Haiti – USA. In Western Europe the cases of disease appeared on 1 year later. It is considered that much patients in the USA (anymore men) and Central Africa. Zaire, Uganda et al. – the amount of sick men and women is identical. On Ukraine the greatest morbidity by AIDS in Odessa, Nikolaev, Lugansk.

Etiology: an exciter is a lymphotropic retrovirus. In 1983 doctor Challos selected HIV-I and HIV-2 is the human T-cell virus (stimulates T-lymphocyte). In 1984 he selected HIV-3 (destroys T-cell) from patients a cancer. In 1986 – the virus of immunodeficit of man got the name (HIV).

Sources of disease: patients with AIDS, бipycohocії, which in an early period of infecting practically healthy.

Risk groups:

- 1) injection drug addicts;
- 2) patients by hemophilia;
- 3) recipients;
- 4) to put, the parents of which belong to the groups of risk;
- 5) prostitutes;
- 6) homosexuals;
- 7) persons which were in Africa.

Ways of infection:

- non-sterile tool (not sterilized properly, it is usually widespread among drug addicts);
- blood of donors transfusion is from the groups of risk (in countries, where a lot of people HIV-infected, even blood which passed testing on a presence HIV can be dangerous, as there is authenticity of that blood can contain HIV, before will be found out antibodies);
- transplantation of organs (bud et cetera)
- внутрішньоутробне infection of fruit or during births of infection of child from a mother
- feeding of child by milk of mother, patient with AIDS
- cracks are on the mucus shell of rectum
- toiletries.

Between the moment of HIV-infection and development of AIDS the protracted period passes relatively, often a few years. This period is shorter among children under age 5 and for persons more senior 40 years. During this latent period a patient can feel practically healthy (although remains infected). Development of TB – the first sign of NEAT infected often.

An about 50% sick TB, simultaneously HIV-infected, does not have obvious signs HIV-infecting. The unique method of establishment of diagnosis is testing on a presence HIV.

Pathogenesis: A HIV will strike T-cell – system of cellular immunity preferentially. A HIV is lymphocytes retrovirus III to the type – citostatics operates on T-helper (SD-4-lymphocytes) which play an important role in the mechanism of ant tuberculosis defense and forming of specific granulom. For patients with AIDS there is a deficit of T-helper, violation of correlation of T-helper and T-suppressor-cell to 1:1 (at a norm 2:1). Oppression of cellular immunity is instrumental in reactivation TB of changes or fresh infection. Oppression of immunity is instrumental in progress of active process, generalization infection with the defeat of lungs, lymphatic knots, marrow, CNS.

Pathomorphology: a specific picture is not. Select 3 types of defeat of lymphatic knots: 1 is follicle hyperplasia; 2 is a follicular hypogenetic involution); 3 is a mixed form

Clinical displays. Select the followings differences of clinical displays of TB among HIV-infected as compared to HIV not infected patients:

1. Presence of unpulmonary forms of TB, often as megascopic lymphatic knots, that is rarely observed at other forms of TB.
2. Frequency of miliary TB is enhance able. MBT can be abstracted from blood, what never is at ordinary TB.
3. Given x-ray inspection. On the early stages of HIV-infected the clinic of TB of lungs little differs from ordinary. In more late stages of HIV-infected more frequent there are megascopic of the mediastinal lymphatic knots. Disintegration meets rarer. More frequent than usually, pleural and pericardial exudates appear can quickly change in lungs.
4. TB can be disposed in the unusual areas of organism, for example, as a tuberculom brain, abscesses in the wall of thorax or elsewhere.
5. In the sputum of MBT does not appear often, in spite of considerable x-ray changes at lungs.
6. Tuberculin test is usually negative (anergy).
7. A fever and loss of mass of body is more frequent observed for HIV-infected of sick TB, than in HIV-infected.

At sick TB it follows to suspect HIV-infected in the followings cases:

1. Generalization of increase of lymphatic knots. In the late stages of HIV-infected lymphatic knots can be dense and sickly, as at a sharp infection.
2. Candida: presence of mycosis, sickly, white spots in a company.
3. Chronic diarrhea during more than 1 month.
4. Zoster.
5. Sarcoma of Kaposi: presence of shallow red vascular spots on a skin and especially on sky.
6. Generalization dermatitis with an itch.
7. Feeling of smoking is in feet (displays of neuropathy).
8. Permanent sickly ulcers are on genitals.

Distinguish such stages of development of HIV-infected:

Sharp HIV-infected of antibody to HIV appear already in 2-6 weeks, sometimes in 3 months. The stage of sharp disease develops: fever, lymphadenopathy, pharyngitis, increase of liver, spleen, dyspepsia disorders, skin rash, there can be meningeal displays, peripheral neuropathy, and encephalitis.

The stage of less symptoms transmitter lasts from 2 to 10, during all of period can pass an infection a sexual way.

The stage of persistent of generalization lymphadenopathy (PGL) is an increase of lymphonoduss not less than in 2 different groups (except for inguinal for adults) to the sizes more than 1 cm (for children more than 0,5 cm), by duration 3 months and anymore.

AIDS-asociation of complex symptoms is set on the basis of 2 clinical symptoms not less than 2 laboratory diagnostic signs.

AIDS-terminal stage of clinical motion – the clinic of opportunism infection or tumor goes out on the first plan

The clinic of TB in combination with AIDS depends on the degree of oppression of immunity. TB, which developed on the early stages of HIV-infected substantially, does not differ from the clinical displays of TB in general: characteristic localization in overhead particles, presence of cavities, to the tuberculin of test positive in 50-80% patients.

On the late stages of HIV-infected, as a result of expressed immunosuppressant, a process runs across atypical:

- the expressed lasted intoxication;
- diffuse infiltration which can be localized in the different departments of lungs;
- increase inwardly of pectoral lymphatic knots, generalization lymphadenopathy;
- mainly for pulmonary defeats: pleura, lymphatic knots, marrow, CNS, buds;
- increase of liver, spleen;
- negative reaction for a sample Mantua, as a result of oppression of cellular immunity, more than in 60% patients;
- absence of MBT is in sputum.

Diagnostics is based on the clinic of opportunism infection.

Testing in the presence of the NEAT antibodies is the unique reliable method of diagnosis.

Laboratory:

- the decline of amount of Sd4-lymfocit – 500 cells/mkl of blood less than (a norm is more than 500 cells/mkl);
- decline the coefficient of correlation of Sd4/Sd8 less than 1,0 (in a norm 1,5-2,0);
- anemia, leucopenia, thrombocytopenia, lymphopenia;
- increase of maintenance of immunoproteins A and G;
- increase of circulatory immune complexes;
- skin anergy is on a tuberculin.

HIV-infected has treatment of TB. Without regard to heavy atypical motion of TB for patients with AIDS, timely and a valuable chemotherapy at the stored sensitiveness to ATP allows to attain an effect in treatment.

Standard chemotherapy of tuberculosis. The modern standardized charts of chemotherapy of the HIV-infected sick TB are the same effective, as well as HIV not infected. MBT in a sputum disappear also quickly. Relapses arise up more not frequent. The increase of mass of body comes slower than in germ-free HIV. During the lead through of standard treatment without a rifampicin effect below, and relapses are more frequent. Part of relapses, possibly, conditioned super infection through the decline of immunity of HIV-infected. Side effects from the action of preparations meet more frequent among HIV-infected.

Death rate from tuberculosis is higher among HIV-infected sick. More frequent it is related to other complications which are caused HIV-infected. But some mortal cases are directly AIDS from TB.

A prognosis is bad, as well as for all of HIV-infected. However much treatment of TB for such patients usually is increases the period of practical health. In addition, it hinders distribution of TB.

Prophylaxis: avoidance of contacts is with the source of infection.

Prophylactic treatment is appointed HIV-infected without a presence for them of clinical displays of TB of isoniasid 0,3 during 3 months, with previous tuberculin test.

Vaccination of BCG by a patient with AIDS and HIV-infected is contra-indicated.

3. TB AND DIABET MELLITUS

Diabetes mellitus (DM) is a disease, conditioned the absolute or relative decline of insulin in an organism, accompanied violation of all of types of exchange of matters. SD is characterized violation of insulin function of pancreas or violation of action of insulin on cells and tissues of organism.

At combination of SD and TB of lungs in swingeing majority of cases (to 90%) diabetes is a previous disease on a background which TB develops in different terms. If both diseases appear simultaneously, obviously, hidden DM was sharpened under act of TB, that joined.

About reason of frequent morbidity of TB the patients of DM do not have the unique idea. The reliable that TB develops in the conditions of decrees resistant of organism to the infection which is determined exhaustion of patients at some forms of diabetes, by the change of immunobiological properties, in particular, to make antibodies and antitoxins the declines of ability the organism of patient of DM. In such cases the uncompensated or not treatment diabetes assists development of TB.

Pathogenesis. TB in majorities sick on DM develops as a form of the second TB as a result of reactivating remaining after tuberculosis changes in lungs and in thoracic lymphatic knots. Contributory infringement factors is deep violation albumen, fatty, carbohydrate exchanges, that results in violation of products of antibodies and oppression of phagocytosis. Decompensation of diabetes and development of acidosis matters. At acidosis acidic commodity accumulates in tissues, ketonic bodies which acseleration reproduction of MBT diminish efficiency of isoniasidum.

At heavy motion of DM the exsudate forms of TB develop with predominance of caseous-necrotic reactions in lungs, by a tendency to disintegration and bronchogenic dissemination.

TB at the heavy forms of DM peculiar inferiority of reparative processes, in this connection in the capsule of hearths, in the wall of cavities of granulation not transformed in connecting tissue. TB of hearth for patients on SD often localized in the lower particles of lungs.

Clinic, as a rule is oligosymptomatic. There can be unsolicitation, stethalgia, increase of temperature. A diagnosis is proposed at the x-ray inspection of organs of thorax or at the bacterioscopy of sputum on MBT.

The patients of DM have a clinic of TB. If discovered TB in an early period, it is possible to attain more favorable development of disease even in combination with diabetes. Malignant, heavy motion of TB, with propensity to rapid progress and disintegration, meets mainly at wrong treatment of diabetes or late exposure of TB.

The first clinical signs of TB at diabetes are an increasing weakness, decline of appetite, loss of mass of body, growth of symptoms of diabetes. A disease at first can run across it is hidden, that is why TB of lungs quite often is diagnosed at the prophylactic photofluorography surveys of population or control roentgenologic inspection.

To the tuberculin of test usually sharply positive. However with development of chronic forms of TB – fibrous-cavern, dissemination – exhaustion of protective forces of organism and tuberculin sensitiveness comes goes down.

Ran across TB at DM differs more slow normalization of the broken exchange of matters, more protracted period of the phenomena of TB of intoxication, slow cicatrisation of cavities of disintegration.

Reasons of progress even of small forms of TB (hearth and small tuberculom) is an underestimation of activity of first found out TB, consequently, therapy of TB, violation is too late begun in a diet and treatment of diabetes which brings indemnifications over of SD to absence.

Ran across diabetes on a background TB, which joined, characterized that TB burdens motion of basic disease. For patients the level of sugar rises in blood, a diuresis and glucosuria is increased, ацидоз can appear. Worsening of exchange of matters appears in the large vibrations of sugar in blood for a day long, which causes feeling of dryness in a company, feeling of thirst, frequent urination, the loss of mass of body makes progress. Information is resulted have a large practical value: the sudden worsening of motion of diabetes must cause for a doctor suspicion on the disease of TB.

The features of motion of TB for patients with of SD and unfavorable influence of TB diabetes require able combination of all of medical measures from a doctor. In the past the half of patients perished from TB, that joined in with diabetes. With introduction to practice of therapy became a physiology diet, insulin and ATP possible clinical treatment of sick TB and by diabetes.

Morbidity of TB is enhance able among the patients of SD requires the special attention to the questions of prophylaxis of TB. The persons of young age, in which diabetes flows usually hardness and often complicated joining of TB, need careful supervision and systematic verifications on TB.

Treatment. At treatments sick on TB and SD it follows to pay a regard to co-ordination of actions of endocrinology and phthisiologist.

Every patient by diabetes in which first discovered TB, must be hospitalized.

Ant diabetic therapy of patients must be complex and individual depending on the state of organism, form and phase of TB of process, weight of diabetes. Directed on indemnification of metabolic disturbances by a physiology diet and optimum doses of insulin.

Antimicrobial therapy at TB for the patients of SD must be conducted lasted, continuously, after the generally accepted charts taking into account the indirect action of preparations, which arises up more frequent at combination of two diseases. Duration of tuberculostatic therapy has in two times to exceed that which is used at the same forms of TB for patients without SD.

4. TB AND ULCEROUS ILLNESS OF GASTRUM

The defeats of gastroenteric highway (digestion tract – DT)) are instrumental in the decline of general resistant of organism as a result of dietary limitations, dysproteinemia, lack of vitamins and microelements. Among patients meet ulcerous illness of stomach and duodenum of TB of lungs in 2 times more frequent than among people which do not suffer this pathology. Frequency of ulcerous illness among sick TB in 2-4 times higher than among a healthy population.

Ulcerous illness is more frequent preceded TB, than develops on his background. If ulcerous illness arises up at sick TB, a specific process flows unfavorable, especially at localization of ulcer in a stomach. The resection of stomach increases frequency of relaps TB and risk of disease for the infected persons.

Pathogenesis: frequent stress the protracted situations are an increase of corticosteroids in blood – a catabolism effect is violation of exchange processes – a gluconeogenesis is an immunodeficit – terms for reactivation of old hearths or progress of tuberculosis at the repeated infecting.

Clinical features of TB are in tissues sick: prevalence is expressed with the frequent passing to chronic TB and efficiency of treatment is mionectic.

Clinical displays of TB for patients by ulcerous illness various, to a great extent predefined the form of pulmonary TB. More frequent patients grumble about a general weakness, worsening of appetite. A decline of mass of body during great while can be the leading sign of origin or sharpening of TB for patients with ulcerous illness. Frequent are combination of TB, ulcerous illness and chronic alcoholic intoxication.

If developed TB for a patient with ulcerous illness of stomach, ran across it worsened considerably, that is expressed a pain syndrome, dyspepsia phenomena, violation of agile and acidic formative the functions of stomach. Ulcerous illness of stomach, which arose up on a background TB, has the hidden motion often. The displays of ulcer sometimes consider as dyspepsia disorders as a result of indirect action of ATP. However complicated such ulcers can be bleeding, perforation.

Treatment. Ant tuberculosis therapy is conducted after in standard charts taking into account the presence of sharpening of ulcerous process.

It is foremost necessary to take off sharpening of ulcerous process, whereupon appoint ATP. A contact is needed with a patient, to explain that die from TB, but not from ulcerous illness and it is not foundation for the waver of ATP, what of them carry worse.

Per appoint majority of ATP sick TB, at the same time many of them have irritating an action on digestion tract (DT). Sick TB which have ulcers of DT carry pirasinamid and riphampicin not always, but especially badly – PASK and etionamid. At ulcerous illness, especially on height of its sharpening, advantage is given intramuscular, intravenous, in bronchial and rectal introduction of medicinal preparations.

After treatment this patient a clinical supervision is needed, and at presence of remaining changes – lead through of chemoprophylaxis relapses.

5. TB AND CHRONIC NO SPECIFIC DISEASES OF LUNGS

For people which are ill on ChNSDL, TB meets in 6 times more frequent than among a population. ChNSdL is instrumental in weakening of resistant of tissues of lungs to TB of infection which stipulates reactivation of remaining changes after the carried TB, and also to forming of the specific impressions at the repeated infecting. A bronchitis, protracted pneumonias, emphysema, largest of bronchi, are combined from TB more frequent, abscess, bronchial asthma treatment of which can stipulate lungs development of «steroid TB».

Clinical features: prevail focal, infiltration forms of TB of lungs and tuberculom. Runs across on a background a intoxication syndrome with a fervescence, with the impression of bronchial tubes, what a cough and dry wheezes testifies to.

Patients, in what ChNSDL developed to the disease of TB

The frequent sharpening of ChNSDL can be the masks of early phase of reactivation or super infection of TB.

A chronic heterospecific process at lungs, being combined with other diseases at TB, complicates motion of basic process of TB and worsens his prognosis. In such sick TB of sharpening of ChNSDL, as a rule, treads once or twice on a year, provoking and sharpening TB process.

Patients, in what Candle developed on a background TB of process

TB of lungs creates terms for the origin of Candle, which can accompany an active process or develop on a background TB of changes.

On a background TB it is assisted development of Candle to the defeat of bronchial tubes and distribution of TB of process in lungs; here the sharp inflammatory diseases of lungs and bronchial tubes pass in Candle. Cicatrice changes are in a bronchial tree, transformation of mucus shell of bronchial tubes, connective tissues education in lungs, in pleura, TB is conditioned by a process, instrumental in the origin of chronic inflammatory diseases.

Fibroplastic processes can increase under act of ATP, that is why at treatment of TB of lungs an after TB syndrome develops with local or diffuse sclerosis, deformation of bronchial tree, bronchial larges, pleura accretions, sacculated hearths and focuses. The morphological displays of after TB syndrome in lungs are closely related to the clinical form of TB.

Among patients with clinically brought through TB a leading place belongs to the chronic bronchitis. A leading role in his origin is played by factors, irritating the mucus shell of bronchial tubes

which are combined with heterospecific, banal or allergic inflammations as a result of general allergization or indirect action of medications.

A heterospecific endobronchitis in parts of sick TB is saved lasted, in majority cured, but even for them the protective function of bronchial tubes of, goes down which does them sensible to the action of the second unfavorable factors: smoke, tobacco, production dust, banal infection.

TB of hearth and tuberculom mainly encapsulated and accompanied development of limited sclerosis. Dissemination of TB peculiar development of widespread pulmonic sclerosis, diffuse bronchitis and emphysema of lungs. Cicatrisation of fibrous-cavern TB is accompanied cirrhosis with rough deformation of all of lungs structures and development of bronchial ectasis.

Sick TB and the pulled round is need permanent supervision and receipt of prophylactic treatment.

Treatment. Chemotherapy by a patient with active TB it is needed to strengthen with sharpening of heterospecific inflammation. Appointing the antibiotics of wide spectrum of action for liquidation of sharpening of heterospecific inflammation, it is needed to take into account possibility of their connection from ATP.

Persons have a prophylaxis of TB and Candle with after TB changes:

1. It is necessary to spare attention the patients of Candle both from point of differential diagnostics and treatment of separate forms of these diseases. The complaints of patient with a cough, which is not halted during 3 months and repeats oneself during 2 and anymore, must cause the special watchfulness, especially if he is accompanied appearance of dry whistling or moist wheezes in default of reactivation TB.

2. It is important to define character of after TB changes of lungs. At the study of x-ray picture it follows to pay a regard to localization of after TB changes, size, morphological substrates (calcinated, hearths, tuberculom, cirrhosis, fibrous, pleura stratifications).

3. More difficult methods of inspection of persons with after TB changes and Candle must be used after the special testimonies. To them take бронхоскопію, which is appointed both with a diagnostic purpose for clarification of pathology of bronchial tubes and with treatment, especially during the selection of abundant festering sputum.

4. In the period of sharpening of Candle it is necessary to probe the sputum of patients with a specific flora and presence of MBT.

6. TUBERCULOSIS AND ALCOHOLISME

Persons with the combined pathology (TB and alcoholism) make a large epidemiology danger not only through high prevalence of TB among sufferings alcoholism but also in connection with the heavy destructive forms of TB which often meet for them, at massive discharge MBT. This situation is conditioned the followings reasons:

- 1) degradation of person;
- 2) low level of sanitary literacy;
- 3) failure to observe of elementary rules of hygiene;
- 4) late appeal after medical help;
- 5) ignoring recommendations of doctors;
- 6) a waiver is of radical therapy.

The same they become especially dangerous for those which surround, diffusing MBT, often poliresistant to ATP. Among sick TB and medical firmness of MBT is observed alcoholism in 2 times more frequent, and poliresistan – in 6 times more frequent than for patients, not sufferings alcoholism. It is a not directly certificate of that treatment of such patients was carried out repeatedly and so much times they avoided him.

TB of lungs at swinging majority of patients develops on background alcoholism, rarer preceded him. It characterizes most persons with the combined pathology as patients by alcoholism with concomitant TB.

Pathogenesis. Researches of lungs for patients with chronic alcoholic intoxication rotined that an alcohol caused development of stagnation in lungs, leucocytes infiltration of walls of bronchial tubes and teethridges, swelling and злущування of alveolar epithelium. An alcohol promotes permeability of walls of vessels with distribution on it of inflammation, endothelia them overgrows, the shells of vessels are thickened due to connecting tissues, a road clearance is subject narrowing or complete obliteration. Formation of surfactant is violated, the feed of pulmonary tissues is violated,

alveolar partitions collapse and emphysema of lungs is formed. Represses local changes in pulmonary tissues, general exhaustion of organism, so as alcoholic gastritis develops, digestive ability tract is violated, there is general violation of plastic and power exchanges. A crackpot feed along from chronic alcoholic intoxication forms the terms of immunodeficit and TB develops.

Clinical displays and ran across TB of lungs at alcoholism can be different. Process in lungs for patients sometimes acquires stormy motion alcoholism and results in a lethal end. Frequent complications of TB of lungs at combination of him with alcoholism are the pulmonary bleeding and sputum blidding which bind to pneumosclerosis and enhanceable permeability of vessels under act of alcohol.

In case of occurring of TB motion of alcoholism is sharply worsened, expressed violation mind sphere is quickly formed, degradation of personality and social neglect. The hard drinking accept the protracted character, the heavier is become by the syndrome of hangover. An infection is TB an additional aggravating factor, by contributory infringement the origin of alcoholic psychoses. A basic role in their development is played by sharpening of TB of process.

Principles of treatment. One of principal reasons of unfavorable motion of lungs TB at alcoholism is inferior treatment through the undiscipline of patients. Without active anti alcoholism treatments sick by alcoholism and TB can not be successful.

Uses high-efficiency, adequate to neat combinations of ATP enables simultaneously to carry out active temperance therapy without serious complications. The last allows to prolong terms stays sick in permanent establishment due to pemiciï of alcoholism and the same to promote efficiency of chemotherapy of TB.

Chemotherapy of TB of lungs for patients it is necessary to conduct alcoholism in permanent establishments in accordance with the generally accepted principles. Patients avoid the reception of preparations often, that is why it follows to carry out strict control above regularity of chemotherapy: it is expedient to enter preparations parenterally, and if inward, non-permanent in daily allowance doses. It is needed to observe a carefulness at setting of preparations which have a hepatotoxic action: rifampicin (especially from isoniasid), psrasinamid, tthionamid, by sick alcoholism, by an alcoholic cirrhosis livers which carried illness of Botkin's, and which continue to practise upon an alcohol.

Plural somatopatics at alcoholism limit the choice of optimum combinations of ATP through contra-indication to their application, that is why at the combined treatment individualization of chemotherapy is needed taking into account character of concomitant somatic pathology.

7. TB AND PREGNANCY

Pregnancy and puerperium is the factors of enhanceable risk of disease on TB.

Nosotropic features: pregnancy and puerperium the unfavorable influence on motion of TB. It is related to proof emoution stress, by changes in the exchange of matters, with dissemination of old TB of hearths, decline of immunological defence. Critical periods: 2th and 5th months pregnancies, when 2 lances of secretion of стероїдних hormones are: 1th – between 40 and by 120 days pregnancies, 2th – between 200 and by 280 days. These changes form changes in the humoral system and in the exchange of matters. In a post-natal period, when in an abdominal region there is sharp decompression, conditioned the prolapsus of diaphragm, that sharpening promotes or relapse of the carried TB and bronchogenic dissemination. The most unfavorable influence of pregnancy on motion of TB is observed in 1th of the half pregnancy, when a disease on TB is observed in 5 times more frequent. Infiltrativni prevail and вогнищеві forms of TB of lymphogenesis origin.

In the second half of pregnancy the risk of activating of TB goes down as a result of the hormonal stabilizing, high fixing of diaphragm and limitation of mobile and diminishing of elastic tensions of lungs.

Influence of pregnancy is on TB. It is presently considered that pregnancy does not assist development of TB and does not influence on progress of illness. However much clinical researches specify on possibility of small risk of relapses and worsening of motion of TB in a puerperium.

Influence of TB is on pregnancy. Clinical supervisions do not ground to assume the unfavorable operating of TB on motion of pregnancy or births.

Penetration of MBT is through a placenta. Infecting of плода can take a place through penetration of MBT in endometrium. Passing to TB of infection through a placenta is possible. Cases are described, when in new-born found out MBT in the lymphatic knots of umbilical cord which specifies on the vein of umbilical cord as way of passing to the infection. MBT also can be found out in standards

placentas and tissues from stillborn babies. Born TB can be the result of hematogenic dissemination from the infected placenta, through the vein of umbilical cord, or asufflation of amniotic liquid a fruit.

The clinical displays of TB for pregnant are characterized the displays of intoxication which in first of the half pregnancy can perceive of for toxicosis. It is needed to pay a regard to increase of temperature, firmness of it, perspire, loss weight. Diagnose TB in this period only by the x-ray inspection of OPC, closing here the stomach of pregnant by a rubber apron, and also research of sputum on MBT.

In the II halves of pregnancy the improvement of motion of TB registers often, from 4 months of pregnancy the state of patients becomes the best, a temperature is normalized, the specific impressions resolve, fresh cavities cicatrized. But progress of TB is possible.

In a post-natal period as a result of decline of resistant of organism and abdominal decompression there is sharpening of TB of process with development of heavy clinical forms of TB of such, as dissemination and caseous pneumonia, which are perceived sometimes as consequences of difficult confinements and can lead to death. Therefore before an extract from permanent establishment of mother necessarily conduct fluorography of organs of thorax, as well as to the its family members.

Diagnostics. X-ray research during pregnancy is conducted after strict testimonies, to find out active TB. Doubts in relation to an irradiation do not justify the waiver of leadthrough of survey sciagram of lungs in the period of pregnancy. In case if it is decided to conduct a roentgenologic inspection, it must be it is executed with protecting from the irradiation of area of stomach, mainly after first the trimester of pregnancy. Therefore sciagraphy of lungs, executed during pregnancy with the observance of measures of carefulness, does not have a large danger for a fruit.

Tuberkulin test during pregnancy finds out persons, infected MBT, but does not determine activity or prevalence of illness. Patients with active TB can not have a positive reaction as a result of the state of anergy.

Microbiological methods. Exposure of MBT in a sputum, biological liquids or other material by a microscopy or in sowing on substratum confirms the diagnosis of TB.

Treatment of active TB is during pregnancy. Expectant mothers must get treatment at once after establishment of diagnosis of Tb. Non treated TB presents a large danger for an expectant mother and its fruit, what exactly specific treatment. Setting of chemotherapy remains the basic method of treatment of active TB in the period of pregnancy.

The analysis of the incorporated data rotined in relation to the risk of *тератогенного* effect of PTP of basic row (isoniasid, rifampicin streptomycin, and etambutol), that all of these preparations penetrated through a placenta, none of them is teratogenic or toxic for a fruit in ordinary doses, except for streptomycin which has a ototoxic effect.

The decision of question about the maintainance of pregnancy lies both on a woman and on to the treating doctor. Treating doctor, must insist on terminating pregnancy: at fibrous-cavernous, chronic dissemination or widespread cirrhotic tuberculosis, complicated pulmonale-cardiology insufficiency; at again found out making progress tuberculosis; combination of tuberculosis with saccharine diabetes or other chronic diseases. Terminating pregnancy the unfavorable influences on motion of TB. At the terms of effective treatment of TB, pregnancy is kept.

TB does not influence on a fruit and the new-born develop without rejections. In default of contra-indications an inoculation is conducted a new-born child the vaccine of BCG and child insulate from a mother on 2 months — term of immunological alteration.

If a woman during pregnancy in a sputum had MBT or proceeds after births, a child requires:

- chemotherapy, if a baby is sick at birth;
- to appoint *ізоніазиду* 5 мг/кг 1 time per a day during 2 months, if a child is healthy.

Rearing of child by milk of mother patient with widespread TB, from expectorate MBT and forbidden the displays of intoxication, and at his calming down and stabilizing - possible. Chimiopreparation hatch with milk of mother, but they in such low concentration, that does not influence on a child.

8. TB AND CANCER OF LUNGS

It is set that cancer lights in sick TB and for persons with remaining changes after brought through TB meets more frequent than among all of population. During realization of the clinical looking after sick TB of breathing organs and persons with remaining changes after brought through TB must be an oncologic watchfulness is certain.

Pathogeny of intercommunication of TB and shrine in a great deal is not found out. A cancer develops more frequent at the forms of TB with fibrotic changes. The origins of shrine bind to the metaplasia of epithelium of mucus shell of bronchial tubes, which is observed at chronic TB inflammation which is instrumental in penetration of exogenous carcinogens.

The risk of development of shrine is enhanceable lungs can be among:

- 1) persons which burn long time;
- 2) men more senior 40 years;
- 3) persons, in which found out a metatubercular syndrome on a background which the inflammatory diseases of lungs develop often;
- 4) groups of population, that the actions of professional or natural carcinogenic factors were added during great while .

Clinical combination of shrine and TB can be divided into three periods:

- 1) without symptoms;
- 2) presence of the expressed symptoms of shrine;
- 3) metastatic.

After a histological picture tumours appear in most cases, then adenocarcinome and on the last place are lower differential tumours. Tumours usually grows in the area of the after tuberculosis cicatrical changes in lungs, however can appear in the wall of cavity, in the capsule of tuberculome, disposed mainly in III, VIII and the X segments of right lungs.

Clinic. The signs of malignant defeat of lungs is a shortness of breath, black-breaking cough, sometimes with a sputum, bliding, pains in a thorax, general weakness, fatigueability, loss weiht, increase of temperature, pains in long tubular bones. Sinyushnost' of mucus shells and acrocianosis appear at the started processes, change of eventual phalanxes as «drumsticks».

It is necessary to remember, that the clinical symptoms of shrine of lights are well known: degrowth body, stethalgias, cough with expectorate blood can be conditioned TB. Therefore sometimes even their appearance does not guard a patient and does not serve as for a doctor cause for the leadthrough of purposeful diagnostics of shrine of lungs.

The careful analysis of x-ray changes in a dynamics at appearance of signs which do not consist in the clinical picture of TB, requires clarification of etiology of these changes.

Diagnostics of shrine of lungs in sick TB and for persons with remaining changes after brought through TB is a difficult task. The extraordinarily valuable method of diagnostics is x-ray research with application of tomogram. However much a decision value has citology research of biopsy lungs and lymphatic knots.

It follows to apply the invasion methods of research (endobronchial research, transthoracic puncture) after clear testimonies, when clinical symptoms and x-ray picture allow to suspect a cancer lungs.

Treatments patient with active TB of lungs in combination with the cancer of lungs conduct treatment ATP after standard charts.

4. The plan and organizational structure of the lesson on discipline

№	Stages of the classes	Distribution of time	Types of control	Means for learning
1.	Preparatory stage	14,4% 13 minutes	Written test	
1.1	Organizational issues	1 minute		
1.2	Formation of motivation	2 minutes		
1.3	Control of entry-level training	10 minutes		
2.	The main stage	68,9% 62 minutes	Oral examination, practical tasks.	Textbooks, manuals, handbooks, guidelines, lecture materials, tables, studies (X-rays, scans), test results and
2.1	Independent work with methodical recommendations	12 minutes		

2.2	Oral survey on topic	30 minutes		examinations, case patients
2.3	Interpretation of test results and examinations	10 minutes		
2.4	Supervision thematic patient	10 minutes		
3.	The final stage	16,7% 15 minutes	Situational tasks	
3.1	Control of final level of training	10 minutes		
3.2	Overall ratingof student learning activities	3 minutes		
3.3	Informing students about the topic of the next lesson	2 minutes	Final test control	

5. The method of educational process on a practical level.

5.1. Preparatory stage. To stunt a subsequent growth of morbidity, sickness and death rate of population from TB possibly only by the well organized work of ant tuberculosis service and doctors of all of specialties of in-hospital network on warning of distribution of TB of infection, decline of infected population that must, to decrease morbidity on TB. In good time found out the patient of TB and high-quality was treatment in most cases can be pulled round. Therefore organization of timely exposure of patients on TB can be attributed to the most essential section of work of domestic doctor in a fight from TB.

TB often arises up in combination with many by not healing diseases which stipulate development of immunodeficit and make considerable problems for diagnostics and treatment of such patients.

TB is often combined with professional illnesses, especially from coniosis which often develop for persons, занятых on dust borne productions, more frequent all for miners.

TB associated from HIV/AIDS is the most thorny problems of medicine, as morbidity on AIDS with every year grows on 10%. The nosotropic cognation of AIDS and TB does these infections a substantial threat to humanity. Every doctor is under an obligation to know this problem.

5.2. The main stage. Includes independent work of students with guidelines, oral interviews on the topic, interpretation of test results and examinations with tuberculosis thematic curation patient.

5.3. Final stage. Conduct final test control, analyze and evaluate the success of the activities of each student. To inform students about the topic of the next lesson and guidance to prepare for it.

6. Applications (tests, situational problems, test questions, etc.): see methodical instructions for independent work of students.

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