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

Approved
at the meetihg 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
Modul №	1
Theme of the lesson 9	Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of the nervous system and the meninges. Pathogenesis, clinic, diagnosis, differential diagnosis. Curation of patients.
Course	4
Faculty	International
Specialty	Medicine

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1. **Topicality of the theme:**

In the conditions of epidemic of TB, which overcame the whole world, about 90% all of cases of disease makes TB of pulmonary localization, which all of forms of the second TB of lungs belong to. 23 – 25% makes in the structure of clinical forms of TB of dissemination TB of lungs. It the form of lungs TB is widespread, quite often with disintegration and complications. Milliary TB – one of the heaviest forms of TB, which can take a shape TB of sepsis with the defeat of all of organs and tissues of organism. At the beginning of development of disease it makes considerable diagnostic labors.

TB of the nervous system presently meets rarely enough. TB of the impression of brain-tunics and tissues of brain can arise up independently or as complication TB of other localization and makes considerable problems for diagnostics.

2. Specific objectives:

To analyse: epidemiology situation from primary TB in Ukraine, a value of different methods of inspection is in diagnostics of different forms of TB of lungs.

To explain: features of motion of primary TB, value of different methods of inspection, are in a diagnostician primary TB, features of motion of different forms of TB of lungs.

To offer: ways of diminishing of infected and morbidity among children and teenagers.

To classify: clinical classification of primary and secondary pulmonary TB.

To interpret: information x-ray inspections of patients on TB of lungs.

To draw: chart of the basic stages of pathogenesis of primary and secondary TB.

To analyze: information of laboratory inspection of sick child.

To make: planning of inspection and treatment of of different forms of TB of lungs; planning of test of Mantoua among children and teenagers.

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

Names of previous disciplines	**Skills are got**
Anatomy	To know the structure of lights, partial and segmental for children and teenagers. Groups of in thorax lymphatic knots on Sukennikov and peripheral lymphatic knots.
Physiology	To know the function of lungs. Able to interpret a spirogram
Pathanatomy	To know character of TB of inflammation (morphological субстрат). Structure of TB of granulom
Physiopathology	To know the allergic reactions of fast (anaphylactic shock) and retarded-action, mechanism of their development
X-ray diagnostic	To know the projection of stakes, segments of lungs on x-ray photography tape. X-ray signs of primary forms of TB of lungs.
Microbiology	To know the pathogenic cultures of MBT for a man, feature of structure of MBT, property. Sequence of painting of stroke on Tsil-Nilsen
	To know the types of immunity (humeral, cellular), mechanisms of their development

Propedevtics of child's illnesses	Able to collect complaints, anamnesis of disease, lives, epidemiology anamnesis; to conduct the objective inspection of sick child (review, palpation, percussion, auscultation)
Pharmacology	To know a pharmacokinetics, pharmacodynamics of ATP. Testimony, contra-indication.
Hygiene	To know the rules of the hygiene mode, which a patient on TB and doctor, persons which are in touch with this patient, must adhere to.

4. Task for independent work during preparation to employment

4.1. List of basic terms, parameters, descriptions which a student must master at preparation to employment:

Term	Determination
Dissemination of TB	It is a clinical form of primary or secondary TB, which arises up as a result lymphatic, haematogenic or bronchi-genesis distribution of MBT in an organism and characterized numerous focal and infiltrated defeat more than two segments of lungs with overwhelming localization in overhead and cortical departments of lungs.
Sub sharp dissemination TB	It is a clinical form of primary or second TB, which arises up as a result lymphatic, hematogenic or bronchi-genesis distribution of MBT in an organism and characterized bilateral, numerous focal and infiltrated defeat more than two segments of lungs with overwhelming localization in overhead and cortical departments of lungs.
Chronic dissemination of TB	it is a clinical form of the second TB of lungs, which has chronic undulating motion (periods of remissien and sharpening), arises up as a result of making progress motion and ineffective treatment during 2, caseous pneumonia, infiltration TB, sharp, sub sharp dissemination of TB.
Milliary TB	It is a clinical form of primary or second TB, which is characterized hematogenesis distribution of MBT in an organism with forming of the same type monomorphic milliary defeats of different organs and tissue (most frequent impression of lungs).
Tifobacilez Landuzi	It is a fleeting TB sepsis which arises up for children.

4.2. Theoretical questions are to employment:

1. Give definition of the secondary TV?
2. What are the features of the clinical presentation of disseminated TB?
3. What are the features of the clinical presentation of miliary TB?

4.3. Practical works (task) which execute on employment:

1. What most frequent localization of hearths at dissemination TB of lungs? On apexes in cortical departments.
   - А. In root departments.
   - Б. In middle departments, mainly cortical.
   - В. In basal-back departments.
2. What motion does have sub sharp dissemination TB?

А. Torpidity.
Б. Making progress.
В. Undulating.
Г. Les symptoms
Д. Quickly.

3. What motion does have chronic dissemination TB?
А. Torpidity.
Б. Making progress.
В. Undulating.
Г. Without symptoms.
Д. Quick.

4. What character is had hearths at sub sharp dissemination TB?
А. Shallow, exudates character, without a tendency to confluence and disintegration.
Б. Middle-, finely focal, exudates character, with a tendency to confluence and disintegration.
В. Shallow, productive character, compression and calcinated.
Г. Polymorphic.
Д. Large calcinated.

5. What form of cavities of disintegration is characteristic for sub sharp dissemination TB of lungs?
А. Bilateral symmetric thin-walled cavities.
Б. Bilateral asymmetric thick-walled cavities.
В. One-sided plural cavities of different form.
Г. One thick-walled cavity and plural thin-walled "daughter's" cavities.
Д. Cavities are not typical.

6. What character is had hearths at miliary TB?
А. Shallow exudates character without a tendency to confluence and disintegration.
Б. Large exudates character with a tendency to confluence and disintegration.
В. Shallow productive character, compression and calcinated.
Г. Polymorphic.
Д. Large calcinatied.

7. What form of cavities of disintegration is characteristic for miliary TB of lungs?
А. Bilateral symmetric thin-walled cavities.
Б. Bilateral asymmetric thick-walled cavities.
В. One-sided plural cavities of different form.
Г. One thick-walled cavity and plural thin-walled "daughter's" cavities.
Д. Cavities are not characteristic.

8. What term does the characteristic x-ray picture of miliary TB appear in from the beginning of illness?
А. In the first days.
Б. On 7-10 days.
В. In 3-4 weeks.
Г. In 2-3 months.
Д. In 5-6 months.

9. What character does have sputum at patient by miliary TB?
А. Mucus.
Б. Mucus-pussy.
В. Festering.
Г. Mucus veined blood.
Д. Sputum absents.

10. What most typical beginning of TB of meningitis?
А. Quick as lightning.
Б. Sharp.
В. Gradual.
Г. Undulating.
Д. Unsymptoms.

Theme contents:

DISSEMINATION OF LUNGS TB

Dissemination of lungs TB is the clinical form of primary or second TB, which arises up as a result lymphohematogenesis or bronchogenic distribution of MBT in an organism and characterized numerous focal and infiltration shads more than two segments of lungs with overwhelming localization in overhead and cortical departments of lungs.

In the structure of clinical forms of TB he makes over 40 %.

Pathogenesis. Dissemination a process can develop both in the primary and in secondary period of TB of infection. Select two basic variants of disease:

- haematogenesis dissemination TB which is characterized bacterihemic and origin of hearths in lungs as a result of distribution of MBT with the flow of blood;
- dissemination TB from mainly by *lympho-bonchial* distribution of MBT.

Haematogenesis and the lymphogenesis ways of development of TB of infection more frequent take a place in its primary period for children, teenagers and grown man persons of young age. The sources of haematogenesis dissemination TB of lungs can be inwardly pectoral lymphatic knots, hearths in lungs (apex or other parts), out lungs (cardiopulmonary) hearths.

Lymphobronchogenic the way of distribution of infection – it the second process more frequent, his source are destructive changes in lungs. Through destruction there is the multiple sowing of lungs and dissemination in such cases engulfs their large areas.

For the origin of dissemination TB of lungs such terms are needed:

- presence of source of infection;
- general decline of reactivity of organism and depression of ant tuberculosis immunity which results in the breach of infection in a vascular river-bed (bacilhemia);
- proper change reactivity from the side of pulmonary fabric with development of local sencibilization, allergic of walls of vessels and them fibrous flowdown.

After clinical motion select sharp (milliary), sub sharp and chronic dissemination TB of lungs. After clinical classification (MSKKH of X revision, in 2003), concerted with statistical classification of WHO, miliary TB taken away in a separate nosology form.

Sub sharp dissemination TB of lungs is a clinical form of the second TB, which develops as a result of exogenous superinfection or endogenous reactivation, lymphogenic distribution of MBT in lungs, on a background hypersensitiveness tissue, and characterized the sub sharp beginning and large down low hearths and infiltration-destructive changes in lungs.

Patomorfology. Arises up at the defeat of in lobules veins and interlobular branches of pulmonary artery. Necrosis of walls of vessels comes saturate blood of interstitial tissues, rarer than parenchyma of lungs. Together with blood here MBT get adenogenic or exogenous origin. It can be complemented haematogenesis and bronchogenic dissemination and forming of broncho-acinosis and broncho-lobular the enough large impressions are with the expressed phase of exsudate inflammation which stipulates rapid festering transformation of caseous and origin of destructions. A pathological process at once spreads on pleura. At haemetogenesis distribution MBT can be also struck lymphatic knots, bones, buds, larynx, skin, eyes and other organs.

A clinic is characterized the gradual or sharp beginning and making progress motion. At the gradual beginning indisposition, fatigue ability, inconstant subfebrille, appear for a patient. Quickly enough a cough, at first dry, joins in with the symptoms of intoxication, then with a selection mucous festering sputum, sometimes кровохарканье and bleeding, loss weight. State the sick is worsened, nightly потливость, shortness of breath, stethalgia disturbs. Noticeable reaction of reflexogenic areas, shortness of percussion sound above the area of defeat, there at forming of cavities of disintegration hearkened to the different caliber moist wheezes on a background the hyposthenia breathing.

Diagnostics. In haemogram find out hypochromic anemia, lymphopenia, monocitosis, increase RSE. In sputum MBT find often. The test of Mantua is positive, sometimes hyperergic.

At x-ray inspection find mainly the large (5-10 mm) are symmetric located in overhead stakes and VI segment, relatively monomorphic focal shades with unclear contours, feel like confluence, with the areas of destructions on a background deformed a small net picture and pleura stratifications. X-ray changes very much typical and remind the picture of «snow-storm». Native lungs extended, incrassate, sometimes with petrificated.

Differential diagnostics at dissemination TB is more frequent than all conducted with bilateral focal pneumonia, metastatis carcinoma, schistosis, Besnier-Boeck-Schaumann II stages, by the stagnant phenomena in lungs.

Bilateral focal pneumonia begins sharply, at times sharp respirator diseases are preceded it. Clinically: high temperature of body, chill, shortness of breath, head pain. At аускультации discover calculation, changeable moist and dry wheezes, mainly above the lower departments of lights. Haemogram: high leucocytosis with the considerable change of formula to the left, high RSE. Dif. diagnostics x-ray pictures presented in a table. Under act of antibiotics of wide spectrum of action the state the sick is quickly improved, hearths resolve.

Metastatic carcinomatosis. At suspicion on him the searches of primary tumor are needed. The shortness of breath, black-breaking cough, prevails in a clinical picture. Hemogram: anemia, considerably megascopic RSE. Dif. diagnostics x-ray pictures presented in a table. The searches of cancer cages are needed in sputum, bronchologic research.

Schistosis. Characteristic information about work of patient in the conditions of high dustly. A process develops gradually, without the symptoms of intoxication, there can be a cough, and selection of sputum, the shortness of breath joins farther. Auscultation – the vesicle breathings, dry wheezes are hyposthenia. Hemogram is in a norm. Dif. diagnostics x-ray pictures presented in a table.

Deasis Besnier-Boeck-Schaumann develops without the symptoms, the small shortness of breath, cough, is possible. To the tuberculin of test usually negative. Hemogram: leucopenia, lymphopenia, there can be something megascopic RSE. Dif. diagnostics x-ray pictures presented in a table. At bronchoscopic find expansion of vessels of mucus shell of bronchial tubes, sarcoid name-plates. At histological research of biopsy of mucus shell of bronchial tubes or megascopic lymphatic knots epithelioid-cellular granulom discover without caseous changes.

The stagnant phenomena in lungs develop at insufficiency of the left ventricle which is at the mitral defects of heart, hypertensive illness, cardio sclerosis and others like that. It is necessary to pay a regard to, cardiac noises increases sizes of heart. On a sciagram, except for changes configuration and sizes of heart, focal shads which are localized mainly in lower and about root areas are symmetric placed evidently. Moist wheezes are there listened. The extended is scolded, stagnant, the «wings of bat remind». A clinical effect and disappearance of focal shads comes after treatment cardiac glicosid, diuretic preparations, and vasodilatation.

Except for the noted diseases, differential diagnostics is conducted from dissemination, by the caused mycotic defeats (in sputum find fungi), with idiopatic alveolit of Chamman-Rich, which the sharp beginning is marked at, respiratory insufficiency develops quickly, in lungs hearkened to so-called a «crack cellophane».

Treatments of subsharp dissemination TB conduct after the standard modes a chemotherapy (1 category) in the conditions of permanent establishment in a flow no less than 8 months. A hormonotherapy is also appointed after a chart, detoxication, desensitizing, resolve, symptomatic therapy.

Consequences. In after antibacterial period in 60-65 % a process passed patients to caseous pneumonia and during 5-6 months they died. In our time timely treatment is provided by a favourable prognosis.

Complete resolve of hearths is rarely and possibly only then, when treatments were begun on the early stages of development of disease. Part of hearths resolves usually, other diminish after sizes, compression, pneumosclerosis develops, and often a process passes dissemination TB to chronic. If the overhead departments of lights are most staggered shrivel,

bronchial tubes are deformed, roots are pulled up to the top, bilateral cirrhosis is formed. At uneffective treatment, when cavities of disintegration not heal over and grow into fibrotic cavities which become the source of bronchogenic dissemination, but considerable fibrotic changes develop in lungs, a process passes to fibrous-cavern TB.

Chronic dissemination TB is the clinical form of the secondary TB of lungs, which has chronic undulating motion (periods of remiss and sharpening), arises up as a result of making progress motion and uneffective treatment during 2, caseous pneumonia, infiltration TB, sharp, subsharp dissemination TB.

More frequent than all this form of TB of lungs develops at the persons of socially non adaptation that is why they carry the most threat of infecting of people and environment. Tactic of domestic doctor must be directed on the exposure of persons practicing upon strong waters and drugs and their timely inspection.

Patomorfologiy. The features of this form of tuberculosis are conditioned periodic repeated lymphohematogenic dissemination MBT in the conditions of immunodeficit, with the impression an interstitium, to formings of small net sclerosis, violations of trophism of lungs and formings of veritable emphysema and hypertrophy of right heart, and also out lungs defeats.

A clinic is characterized undulating motion with the periods of sharpening and remission. Development of illness is notapperseption (unrealized). Long time, sometimes a lot of months, why alcoholism and drug addiction promotes, there is a subfebrill temperature, expressed fatigueability, general weakness, cough with frequent spitting blood, severe loss of mass of body (to the cachexy), shortness of breath. During remission patients feel satisfactorily, complaints about an insignificant weakness, shortness of breath.

At an external review (at the protracted, making progress process) patients find out the decline of mass of body, falling back of over- and underclavicular fossulas is marked; the eventual phalanxes of fingers have the appearance of «drumsticks».

Shortness of percussion sound is marked above the area of defeat, in the lower departments of lungs is a boxes tint due to emphysema. At auscultation – breathings, mainly dry, sometimes moist wheezes are hyposthenia.

Diagnostics. In hemogram during remission of changes does not find, in the period of sharpening find out a small leucocytosis, lymphopenia, at times with monocytosis, increase RSE. In sputum – MBT in great numbers. The test of Mantua is positive, but can be negative (anergic).

On x-ray picture find in the both lungs of the focal shades of different size and intensity, pneumosclerosis, rounded thin-walled and old deformed cavities, mainly in overhead particles, diminishing of overhead particles and emphysema in basals. A root is not structured, smart to the top – as branches of «weeping willow».

Differential diagnostics is conducted with those diseases, what subsharp dissemination TB.

Treatments of chronic dissemination TB conduct after the standard modes a chemotherapy (1 category – VDTB, 2 category – RTB, 4 category – ChTB) in the conditions of permanent establishment in a flow no less than 8 months. If a process proceeds a lot of years and patient already treated oneself repeatedly, at setting of chemotherapy it is needed to take into account a previous chemotherapy, sensitiveness of MBT to PTP. A hormonotherapy is also appointed after a chart, detoxication, and desensitizing, resolved, symptomatic therapy. After testimonies there is surgical treatment.

Consequences. On a background the protracted motion of disease part of hearths resolves under act of chemotherapy, other compression, there is pneumofibrosis. Passing of process is possible to the cirrhosis, and at forming of cavity which does not heal over under act of treatment, in fibrotic cavern TB of lungs.

MILLIARY TB

Milliary tuberculosis is a clinical form of primary or secondary TB, which is characterized hematogenic distribution of MBT in an organism with forming of of the same type monomorphic millium defeats of different organs and tissues.

This form TB in our time is meets rarely, arises up in a hyposthenia organism, at the persons of senile (old) age, now and then for women during pregnancy or after births, sometimes as complication of primary TB for children which live in family of patient of secreting MBT in the conditions of massive infection.

Patomorphology. In lungs plural hearths are formed by a size from millet grain (milliare is millet). From here the name of this form is milliary TB. The defeat of capillaries of lungs is preceded appearance of hearths, which conduces to the increase of its permeability. In the wall of shallow vessels, interstitial and alveolar partitions shallow TB of hearth is formed. They arise up sizes 1 – 2 mm during short time and that is why monomorphic: all of hearths of mainly exudates or productive character, rarely – necrotizing. The impression the interstitial of lungs with the edema of biological membranes and capillartoxicated is stipulated by considerable functional violations of the respiratory system. At milliary TB an infection also gets in the large circle of circulation of blood, and analogical hearths are formed and in other organs – liver, spleen, buds. Its skidding is possible in a cerebrum and his shells, then develops is TB meningitis.

Depending on overwhelming localization of defeats and clinical displays is select: tifobasciles Landuzi (septic TB), lung, tifoid and meningeal forms of milliary TB. The general features of these forms are proof bacillemia, hematological generalization infections in an organism and declines of immunity.

Tifobacilez Landuzi is a fleeting tubercular sepsis which arises up for children. Begins sharply with a fervescence to 39-40°C, accompanied a fever, delirium by the loss of consciousness. For 7-10 days patients die. A diagnosis is proposed on the basis of autopsy.

Pulmonary form milliar TB clinical is characterized: sharply begins, from a high temperature which arrives at 39-40°C and has proof character with small daily allowance vibrations. At adults a temperature reaction is less expressed. The symptoms of respiratory insufficiency are expressed: shortness (to 40 breathings for a minute)of breath, feeling of shortage of air, frequent breathing, diffuse cyanosis, orthopnoe. A cough is mainly dry, black-breaking. Thus there is a fever, perspire, head pain, fatigue, general weakness, emotional excited.

The state is sick heavy, a skin is pale with easy cyanosis, and breathing is superficial. Percussion is determined easy tympanic, the limits of lungs are extended in connection with the extended emphysema. Auscultation – weakening of the vesicular breathing is expressed, at appearance of destructions can appear finely vesicular moist wheezes. Tachycardia answers a temperature reaction. There is an increase of liver and spleen.

Typhoid form of milliary tuberculosis is formed as a result of the overwhelming impression of organs of abdominal region and peritoneum to which peculiar high resorption ability, as a result beginning of illness acquires the special sharpness and reminds typhoid.

Characterized the rapid increase of temperature to 39-40°C and instability for a day long, accompanied a fever, violation of consciousness, tachycardia (at typhoid is bradicardia), violations of rhythm (extrasistol, paroxysm of blinking arrhythmia). In 10-12 days from the beginning of disease appear cough, the bronchial breathing, dry whistling wheezes auscultation, in lungs typical appear shallow monomorphic shads are characteristic for milliary TB which facilitates diagnostics considerably. In blood there is leucositosis, lymphopenia, monocitosis, moderato enhance able RSE. On EKG are retypes sharp or under sharp pulmonary heart (overload of right departments of heart, incomplete blockade of right leg of bunch of Gisa). If TB is not diagnosed in good time and specific treatment not appointed, in 3 – 4 weeks of patient dies.

A meningeal form is characterized development at patients of meningeal syndrome (irritation of brain-tunics) which includes: head pain, vomits, pain at percussion skulls, tension of cervical muscles, positive symptoms of Kerniga and Brudzinsky. A meningeal syndrome can be predefined the edema of brain-tunics (meningism) or their inflammation (meningitis).

Diagnostics. Hemogram: the amount of leucocytes is normal, or something enhance able, at progress of process leucopenia, megascopic amount of leucocytes is possible, there is the expressed lymphopenia, monocitosis, to RSE normal or something megascopic.

At swingeing majority of patients of MBT in sputum does not find, they appear only at presence of destruction of lungs.

The test of Mantu, as a rule, is negative, or positive.

X-ray research plays a decision role in establishment of diagnosis, however much changes in lungs appear only from 7 – 10 day of disease. X-ray picture the miliary TB is characterized monomorphic by shallow in both pulmonary fields, to small and middle intensity – «millium dissemination», located chainlets for the step of vessels on a background reduction of vascular river-bed and increase of transparency of lungs. The structure of root is mionectic.

Differential diagnostics is conducted with those diseases, what other variants of dissemination TB.

At the beginning of disease miliary TB hardness to distinguish from a sepsis at which also focal changes look after in lungs, at times from absceses. At a sepsis usually find connection with pussing processes in other organs, general state as heavy as lead, temperature with large amplitudes, chill. Leucocytosis exceeds $20x10^9$/l with the considerable change of formula to the left. For confirmation of diagnosis of sepsis it is necessary to do occupied blood on sterility.

Treatments of miliary TB conduct after the standard modes chemotherapy (1 category) in the conditions of permanent establishment in a flow no less than 8 months. A hormonotherapy is also appointed after a chart, detoxication, desensitizing, resolve, symptomatic therapy.

Consequences. If TB is not diagnosed in good time and specific treatment not appointed, in 3 – 4 weeks of patient dies. Under act of timely anti tuberculosis therapy there is complete resolve of hearths or forming in them place of connective scars; fibrosis of connective is lungs and development of emphysema.

TB OF NERVOUS SYSTEM AND BRAIN-TUNICS

Tubercular meningitis is a clinical form of TB of the nervous system with the specific defeat of soft pia mater.

The specific defeat of brain-tunics can be accompanied defeats and tissues of brain – meningitis.

Pathogenesis. Develops as primary or second TB as a result of hematogenic distribution of MBT in an organism. Overcoming a hemato-encephalic barrier, MBT infect the vascular interlacing of pia, from where get to the neurolymph and settle on the soft shell of basale areas of brain, stipulating at first development of serosal-fibrinoid inflammation and granulomatic-caseous changes in the vascular interlacings of pia and brain, and then development of necrosis of vessels, trombovascular with a hemorrhage and violation of circulation of blood in the separate areas of brain. Pathological changes spread from basal areas on a visual highway, frontal particles and bulb brain. From caseous MBT get in a neurolymph, spread on a spinal cord, stipulating formation of the specific impressions, cicatricle changes and spinal block.

Pathomorphology. Select <u>three forms meningitis</u>:

1. Basilar meningitis is the impression of soft shell of basis of brain, there is numerous miliary TB of hearth on them. Usually the processes of proliferal prevail with propensity to formation of scars and accretions between pia maters. A defeat can spread from crossing of visual nerves on the areas of frontal particles of or to the bulb brain;

2. Meningo-encephalitis, when in an inflammatory process tissues of brain are pulled in with an origin on him of TB of hearths and their next melting;
3. Spinal meningitis, if a specific inflammatory process spreads on a spinal cord.

An inflammatory process in the ventricles of brain results in violation of circulation of neurolymph and development of hydro cranium.

Clinic. In clinical motion illnesses are selected by three periods:

I th – prodromal (from 3 days – to 4 weeks)
II nd - an irritation of brain-tunics (meningeal)
III – paresis and paralyses (terminal).

In 1 prodromal period illness develops in 70% patients gradually, displays prevail intoxication syndrome is a subfebril increase of temperature, weakness, declines of appetite, emotional disorders (crabbiness, tearfulness, apathy), inconstant head pains, bad bearableness of lungs and noise, gastro-enteric disorders, bradicardia even at an enhance able temperature.

II period - meningeal. In 1-4 weeks there is the sharpening of illness with the increase of temperature to 39—40°C, and by the symptoms of defeat of the nervous system is a permanent head megalgia in frontal and cervical areas, which is not taken off analgesics; sudden fontainsimilary vomits without nausea, somnolence, apathy, oppression of consciousness, unbearableness of light and noise. The symptoms of the impression of diencephalic area of brain appear is hyperestesia of skin, proof red dermografisme (vegetovesels disorders), the fleeting spots of red color appear on the skin of person and breast (spots of Trusso).

The poorly expressed meningeal symptoms - tension of muscles of the back (characteristic casting-out of chairman) of head, positive symptoms of Kernig's (impossibility of unbending of lower extremity is in a knee-joint, if it is arcuated in pelvic-femur joints) and Brudzinsky's appear at the end of the first week (overhead – during the sharp bending of chairman there is bending of feet and undercutting them to the stomach and lower – at bending of one leg in genicular and pelvic-femur joints bends et al).

The impression of basale areas of brain is accompanied distribution of process on craniocerebral nerves: III pair – oculomotoris (eyemoves): ptimalum, midrias (expansion of pupil), divorcement cross-eye (on a healthy side an eyeball looks straight, and on staggered it is returned outwardly and downward); The VI pair are taking nerves: consilient cross-eye, impossibility of turn of the proper eyeball outwardly; The VII pair are facial nerves: asymmetry of person, part of person is staggered a masklike, nosolabial fold is smoothed out, the corner of mouth is tomentous, an eye crack does not close up (lagophtalm); VIII pair is a cochlear nerve: decline of ear, sometimes to his complete loss, vestibular violations are dizziness, unsteady step, feeling of falling.

In the end II and at the beginning III periods of TB a process spreads on a cerebellum and bulb brain with the defeat of bulbar nerves (IX, X and XII of pair – glossopharingeus, wandering and sublungual), as a result there is disorder of swallowing (odynophagia), hiccup, aphonia, disartria, a language becomes immobile (glossoplegia), disorder of breathing and pulse which has an unfavorable prognosis.

III period – a terminal proceeds about week (15 is a 24th day of illness). A patient lies with a throw-away head, closed eyes, feet are smart to the belly, a stomach is pulled in. Consciousness fully lost, there can be the convulsive state. There is a hemiparesis and to the gem paralyses of central origin. Breathing is broken, type of Cheyns-Stok's. There can be a breathing paralysis and to come death.

Distribution of the specific impressions on fabric of brain stipulates development of meningoencephalitis, which shows up violation of termoregulation (hyper- or hypothermia), cacesthesias, paresises and paralyses which have central spasmatic character, there are trophic violations, bedsores, cachexy, the paralysis of respiratory and vascular centers and death come then.

Spinal's form is accompanied the origin of counterfoil megalgias in area of breast, stomach or small of the back, which are not taken off even drugs. The irritation of spinal counterfoils is stipulated by the increase of tone of muscles of the back of head, body and stomach, causing ригидность of muscles, opisthotonos and involvement of stomach. Later there are disorders of function of pelvic organs are difficulties of urination, and later is incontinence of urine, locks, and also motive disorders are monoparesis, paraparesis or languid paralysis.

Diagnostics. In haemogram can be leucositisis, insignificant change of formula to the left, lymphopenia, some increase RSE.

A test of Mantua more frequent is negative, that testifies to the immunodeficit.

For a neurolymph characteristically: increase of pressure to 300-500 mm вод. ст.(normal 50-150), during punction flows out a stream or frequent drops (in a norm 20-40 drops are after min.), transparent, after defending during 12-24 hours fibrinosis forms spider web tape in which in 10-20% patients are found by MBT. The amount of albumens is enhanceable to 2-3 grammes/l (a norm is 0,2-0,4 grammes/l). To the reaction Pandy and Nonne-Apelt's positive and specify on advantage of globulin of albuminous faction above an albumen. Pleocitosis – the amount of cages is enhanceable to 100 – 300 in 1 mcl (a norm is 1-5 cages), mainly lymphocites. Maintenance of chlorides (norm 120-128 mmol/l) and sugar is mionectic (norm 2,78-3,89 mmol/l).

Spinal punction is conducted to on by a diagnostic and clinical testimony at first 1 time per a week, during stabilizing of process 1 time in 2 weeks and on to the finishing stage of treatment 1 time per a month.

X-ray an inspection is conducted with the purpose of exposure of tuberculosis of any localization, which can be a source hematogenesis dissemination MBT and development of meningoencephalitis.

Differential diagnostics of TB of meningitis is foremost conducted with meningitis of other etiology (see table).

Meningism – toxico-alergic, quickly passing the reactions of pia maters. Can develop for some patients on TB. Clinically shows up the attacks of head pain in default of or to weak expressed of symptoms tension of cervical muscles and symptom of Kerniga. As a rule, a temperature is normal and during a few days without treatment symptoms are liquidated. The increase of intracraneal pressure is possible, but composition of neurolymph does not change. Can be observed for children at different sharp diseases.

Sharpening of chronic sinuitis or otitis at patients on TB can entail a meningosimilar syndrome. Otorhinolaryngologic research which must be conducted at suspicion on TB meningitis, and also normal composition of neurolymph is given possibility to put a correct diagnosis.

Primary tumors of brain. A disease develops more slowly (during a few months), head pain has noncommunicative character, there are signs of focal defeats of matter of brain, early stagnant pupilar develop on an eye day and there is progress of this symptom, changes in a neurolymph are insignificant or absent. Information of electro-physiology researches of brain, computer tomography, help in diagnostics.

The expressed meningeal syndrome develops at a subarachnoidal hemorrhage. Bloody character of neurolymph at normal or almost normal other indexes and rapid (during a few days) normalization of neurolymph testify to the subarachnoidite hemorrhage.

Treatment. Features of treatment patients by meningitis: ending mode during 1-2 months, then plant a patient and later (in 3 – 4 months) – gradually proceed in ability to walk. Chemotherapy is conducted after a category 1. Degidratation therapy is conducted with the purpose of prophylaxis of hydro cranium and diminishing of sharpness of meningeal syndrome as unloading lumbar puncture, setting of diuretics. A hormonotherapy is also appointed after a chart, vitamin, desintoxication, and desensitizing, symptomatic therapy. Sanitation of neurolymph comes in 3-6 months of treatment. At presence of proserin appoint at sick motive

violations (paresis, paralysis), galantamin, selurin et al, but not earlier than in 3 – 4 months of treatment. A massage is added after 4-5 months by treatments, LFK – after sanitation of neurolymph, but not earlier than in 6 months of treatment.

Consequences. At the treatment of patients begun in good time on TB CNS and brain-tunics their complete curing is possible. A lethal end is observed in the cases of the lately begun treatment for hyposthenia patients, often with heavy accompanying pathology. In the case of the too late begun treatment remaining changes are formed: atrophy of visual nerves, declines of intellect, paresis and others like that.

Materials are for self-control:

A. Task for self-control (tables, charts, pictures, graphic arts):

B. Task for self-control

1. . The patient of 32 illness sharply. Complains about a high temperature, perspire, cough, shortness of breath. At x-ray inspection research during both of lungs, mainly in overhead departments, found out the symmetric plural focal shadows of middle sizes, to small intensity, have a tendency to confluence, with unclear contours. In the II segment right lungs the thin-walled cavity is determined to 3 cm in a diameter. In the roots of lungs is calcinated lymphatic knots. In sputum found out MBT. The diagnosis of TB of lungs is set.
   What clinical form of TB found at patient?

2. Patient 37 years illness sharply, after super cooling. Complains about a fervescence to 38°C, nightly perspire, cough with sputum, and shortness of breath. At roentgenologic research during both of lungs, mainly in overhead departments, found out the symmetric plural focal shadows of middle sizes, to small intensity, with unclear contours. In the II segment right lungs the thin-walled cavity is determined to 3 cm in a diameter. In sputum found MBT. A diagnosis is set: dissemination TB of lungs.
   What phase of process found at patient?

3. At patient of 24th at fluorographic inspection in overhead particles both the lungs it is discovered middle and large sizes of focal shade of small intensity with unclear contours. Complaints are not present. Objectively without pathology. Blood test: L-9,2x10^9/l, RSE-22 mm/hour. Test of Manitou from 2 TU PPD is infiltration of diameter 12 mm
   What clinical form of TB found out at patient?

4. At patient of 42 years of FDTB. X-ray inspection: in both the lungs the plural focal shadows of middle sizes are determined, to small and middle intensity. In S2 both the lungs there are the thin-walled cavities. In sputum MBT+ found. A diagnosis is set: FDTB (date of establishment of diagnosis) of lungs (dissemination), Destr+, Mbt+M+C0 Rezist0, Gist0.
   What category is it necessary to take a patient to?

5. The patient of 42 grumbles about a periodic fervescence to 37,8°C during 6 months, loss weight, cough with sputum. Returned from a conclusion. Objectively: exhausted, breathing is hard. Blood test: L-10,5x10^9/l, L-18%, RSE - 32 mm/hour. Roentgenologic: during both the lungs plural focal and infiltration shads of different sizes and different intensity is determined.
   What form of TB of lights found at patient?

Literature

Basis:

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Supplementary

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