MINISTRY OF HEALTHCARE OF THE REPUBLIC OF UZBEKISTAN

TASHKENT MEDICAL AKADEMY

CHAIR OF INTERNAL DISEASES ON GP EDUCATION WITH ENDOCRINOLOGY

CASE - TECHNOLOGY

ON «COUGH SYNDROME. ARVI PROBLEM. ACUTE BRONCHITIS. PNEUMONIA. DIFFENTSIAL DIAGNOSIS» STUDY THEME

CASE
Solves the problem on GP tactics on cough syndrome

TASHKENT – 2012

MINISTRY OF HEALTHCARE OF THE REPUBLIC OF UZBEKISTAN

TASHKENT MEDICAL AKADEMY

CHAIR OF INTERNAL DISEASES ON GP EDUCATION WITH ENDOCRINOLOGY

«CONFIRM»

Prorector on educational affairs

professor O.R. Teshaev

_____

____ _____ 2012 г

CASE - TECHNOLOGY

ON « COUGH SYNDROME. ARVI PROBLEM. ACUTE BRONCHITIS. PNEUMONIA. DIFFENTSIAL DIAGNOSIS » STUDY THEME

Case prepared by: J.Sh. Khaytimbetov

Case prepared by:

J.Sh. Khaytimbetov – assistant chair of internal diseases on GP education with endocrinology of TMA.

Recensents:

A.V.Fosilov– the professor of the department chair on GP preparation

N.B. Nuriddinova – the dotsent chair of internal diseases on GP education with allergology.

It is considered at cathedral meeting № from __

The methodical recommendation is approved at TsMK TMA meeting, № protocol ___ from

The methodical recommendation is approved at meeting of the Academic Council of TMA, No. protocol - from

Scientific secretary of TMA Dots: Nurillayeva N. M.

Subject: COUGH SYNDROME.

ARVI problem. ACUTE BRONCHITIS. PNEUMONIA. DIFFENTSIAL DIAGNOSIS.

Pedagogical summary

Subject: Internal diseases
Training level: the heuristic
Course: 7 medical and medico-pedagogical faculties.
Purpose of this case: to deepen and expand knowledge, to create ability and skills of students directed by the diagnosis of an acute bronchitis, ARVI pneumonia and to prove the diagnosis, and also competently to appoint treatment from VOP position.
Planned educational results: by results of work with a case students will gain skills:
- analysis of a practical situation

- development of logic thinking
For the successful solution of this case the student should possess knowledge of classification, clinical manifestations and the basic principles of therapy of ARVI, an acute bronchitis, pneumonia

This case reflects ***artificially created situation.*** Object of a case is the sick child.
Sources of information of a case:
1. PULMONOLOGY. Algorithms diagnosis and treatments. Tashkent 2007 of E.B of Zuyev. River. And. Usmanov
2. The directory of 2000 diseases under F.G.Nazyrova's edition. Denisov», M, GEOTAR-media, 2000 g
3. Textbook «Internal diseases», M, "Medicine", 2009 Mukhin Martynov
5. www. medlit.ru
6.www.consilium.ru.

Case characteristic: This case belongs to room, subject. It structured, voprosny, contains set of the facts.
The case belongs to illustrating a problem, the decision both to training analysis and an assessment.
The case is presented in printed form and can be used ***on discipline*** internal diseases.

Situation No. 1

1. Child of 5 months. Since 1,5 months on artificial feeding. From now on added in weight more norm. The real disease began sharply, from temperature lifting to 38 S.Na sleduyushchy den the condition sharply worsened: there was a paroksizmalny cough, short wind with the complicated whistling breath.

Family anamnesis: mother has a food and medicinal allergy, the father is almost healthy.

At survey condition heavy. The vtyazheniye of compliant places of a thorax, inflating of wings of a nose, perioralny cyanosis is noted. ChD 60 in minute of Perkutorno: over lungs a pulmonary sound with a box shade. Auskultativno: mass of melkopuzyrchaty and krepitiruyushchy rattles on a breath and at the very beginning of an exhalation. Heart borders: the right – on 0,5 cm from the right edge of a breast, left – on 0,5 cm from the left sredneklyuchichny line. Tones of heart are a little muffled. ChSS 140 Òn minute. Body temperature 38,6 C. The stomach is blown a little up, at a palpation / B. Liver +2см. The chair was 2 times, kashitseobrazny, yellow, without pathological impurity.

General analysis of blood: Hb – 118 g/l, Ayr – 4,3Õ10/l, Leyk – 6,2Õ10/l, p.b. of-1 %, with / I am-30 %, э-3 %, l - 58 %, m - 8 %, SOE of-15 mm/hours.

Rentgenografiya of a thorax: the increased transparency of pulmonary fields, especially on peripheries, low standing of a diaphragm is noted.

1. Your preliminary diagnosis
2. Differntsialny diagnosis
3. Medical tactics.

Situation No. 2

Man of 52 years. Works as the builder. It is sick 2 days. After overcoolings there were pains in the right half of the thorax, amplifying at breath and cough, temperature increase to 40 degrees.

At survey condition of average weight, giperemiya of the person, pas lips herpes. Over lungs on the right behind in nizhy departments the perkutorny sound is dulled. Auskultativno: against the weakened vesicular breath a krepitatsiya. ChD – 28 in minute. Heart borders: the right – on the right edge of a breast, noise is not present. ChSS 110 Òn/minute. Stomach soft, / B. The liver does not act from under a costal arch.

General analysis of blood: HB-of 140 g/l, Ayr-5,1Õ10/l, Leyk-12,9Õ10/l, p.b. of 6 %, with / I am the 76th %, э-3 %, l - 38 %, m - 9 %, SOE of-30 mm/hours

Rentgenografiya of a thorax: sites of an infiltratsiya of a pulmonary fabric on the right behind in the bottom departments.,

1. Your preliminary diagnosis
2. Differenitsialny diagnosis
3. Medical tactics

EDUCATIONAL METHODICAL MATERIAL.
PNEUMONIA.
Definition

Pneumonia is sharp, various on an etiology and патогенезу ekssudativny inflammatory processes паренхимы lungs and a mezhutochny fabric with involvement of vascular system being resolved in 4 weeks.

If in 4 weeks there is no kliniko-radiological a rekonvalestsentsiya, this disease – long pneumonia.

Etiology

In the modern qualifier acute pneumonias are subdivided on an etiologichesky sign. Generally it is Gr + flora – a pneumonia streptococcus, a pneumococcus, Pfeyfer's stick (at kommunvalny pneumonia); and Gr — flora – an intestinal stick, a seratsiya, an enterobakter. More than 80-90 % of all activators are a pneumococcus, is more rare – a mycoplasma, Friedlander's stick, rikketsiya, etc. flora.

Allocate some groups of activators:

Gram-polozhitelnaya flora – a pneumonia streptococcus, or a pneumococcus; Pfeyfer's stick

Gram-otritsatelnaya flora – intestinal stick, enterobakterseratsiya.

Depending on activators and groups of pneumonia are subdivided into (house) – **Gr +:**

I. Vnebolnichpye

- pneumococcus,
- mycoplasma,
- haemo lytic paldochka,
- enterobakteriya,
- sinegnoyny stick.

II. Nozokomialnye (intrahospital), at a cat. Allocate Gr-:

- sinegnoyny stick,
- enterobakteriya,
- intestinal stick, seratsiya, atsinetobakter,
- sintsitialny virus,
- sticks inflyuenets and parainflyuenets.

In this group the % of antibiotikoustoychivy strains is high.

III. Atypical pneumonia (» 15 % of all pneumonia) at which are sowed:

- mycoplasma of pneumonia,
- hlamidiya,
- viruses – rinosintitsialny groups A,
- stick inflyuenets And.

IV. At immunokompramentirovanny patients define mushrooms, bacteria, parasites, viruses:

- rino-sintitsialny viruses,
- pneumococcus, mushrooms,
- parasites,
- gemofilny stick,
- HIV.

And. V-kletochnyoye IDS:

Pneumococcus and gemofilny stick,

B. T-cellular IDS:

a) generally from cavities in in / д – a multiresistant tubercular stick

б) can be at system mycosis

в) can be at a combination to abscesses hypodermic or a brain – nokardiya
г) at diffuzny alvelyarny infiltrates, diarrhea, faints
д) a hypoxemia, giperstitsialny infiltrate – a pnevmotsist
е) at AIDS – TsMV
ж) at an organ transplantation

V. Aspiratsionnye of pneumonia (at violation of function of a nadgortannik, or secondary pneumonia)

Gr-and anaerobny flora are sowed

In 85-95 % - the pneumococcus, is more rare than Sorrento, Friedlander's sticks and other flora, intestinal, sinegnoyny.

In an etiology of long pneumonia take place – bacterial and virus associations, L-forms of bacteria, antibiotikoustoychivy strains.

In an etiology of chronic pneumonia the infection has great value. Being an outcome of an unsuccessful current of an acute pneumonia, chronic pneumonia is characterized by continuous existence in the centers of an inflammation of potentially active microflora similar to that which sow from a bronchial secret of patients with acute pneumonias. Except a pneumococcus, great value conditional and pathogenetic microbes, vegetiruyushchy in the top respiratory ways, and (Got zelenyashchy and haemo lytic streptococci, a neysseriya, a sinegnoyny stick, proty, esherikhiya).

Risk factors

The factors promoting emergence of pneumonia:

Ekzogennye:

1. overcooling;
2. virus infection of the top respiratory ways;
3. inhalation of toxic substances and smoking (if the person smokes more than 15 cigarets in day, it observes a paralytic condition of the mukotsiliarny road clearance, especially that part which is provided with palpation of eyelashes vibrating an epiteliya);
4. pollution of the air pool;

Endogennye:

5. immunodeficiency;
6. alcohol;
7. injury of a thorax;
8. postoperative period;
9. stagnant insufficiency of blood circulation;
10. age (pneumonia always hard proceeds at children and old men);
11. diseases of bronkho-pulmonary system.

Risk factors of long pneumonia of pneumonia

1. not adequately begun therapy (small doses, without sensitivity to antibiotics) also is picked up
2. 4 weeks not resolved in a current – an acute pneumonia
3. mixed (bacterial, virus associations)
4. bacterial superinfections
5. Bacterium L-forms

6. Antibiotikoustoychivye of a form of activators

Patogenez

In emergence of pneumonia the great value indulges in such pathogenetic mechanisms, as adhesion of microorganisms, their colonization and an invasion in epitelialny and other cages pulmonary.

Initsialnym a link in inflammation emergence in lungs is dysfunction resnitchaty vibrating an epiteliya and violation of a mukotsiliarny road clearance. In these conditions causative agents of pneumonia on means carry out search of a retseptorny field, adhesion on it and the subsequent colonization.

In chronic pneumonia a number of factors is considered: virus defeat of the respiratory device; previous acute pneumonia chronic bronkholegochny diseases, especially obstructive; chronic inflammatory processes of the top respiratory ways and okolonosovy bosoms; involyutivny changes of lungs; obesity; professional harm; pollution of the atmosphere of air; smoking; adverse climatic conditions. A big role late begun and inadequate treatment of an acute inflammation, and as plays intensity of impact on a pulmonary fabric of an infectious factor. So, the deepest damage of a pulmonary fabric with an outcome in rough arises at the acute pneumonias caused by nekrotiziruyushchy microorganisms (staphilococ, klebsiella, etc.) . At the same time that fact is doubtless that damaging action of an infectious factor on a pulmonary fabric depends not only on a microorganism virulentnost, but also from reactance of an organism of the patient.

Pneumonia development

It is supposed that in most cases pneumonia results from inhalation of the activators containing in air, or an aspiration of rotoglotochny flora. Pneumonia is localized usually in averages and the bottom departments of lungs. Having broken through protective barriers of lungs, activators can directly reach alveoluses or settle in terminal and under favorable conditions intensively to breed.

The activators allocating (for example, staphilococ), promote the reaction limiting an inflammation. The similar otgranicheniye is observed in case of initial development of inflammatory process in bronchial tubes. Ochagovy pneumonia (bronkhopnevmoniya) then develops. The essential moment in these cases is obstruction slime that can conduct to development. The pneumonic centers can merge.

In certain cases (for example, at a mikoplazmenny infection) the ekssudativny component of an inflammation is expressed slightly, and inflammatory reaction is localized in a mezhutochny fabric, walls and alveolar partitions. Then speak about interstitsialny pneumonia.

Classification

(It is SCARLET, the American Torokalnogo of society, the Canadian and Russian 1993 g)

1. Extra sick-lists - Municipal (house, acquired out of a hospital);
2. Nozokomialnye (hospital, intrahospital);
3. At immunokompromentirovanny patients;
4. Aspiratsionnye (with violation of function of a nadrogtannik, Mendelssohn syndrome);

5. Atypical (caused by endocellular activators).

MKB X of revision classifies pneumonia as bronkhopnevmoniya (earlier ochagovy) and plevropnevmoniya (earlier krupozny).

Clinic

Options of an onset of the illness:

1. sharp (fever, hyperthermia);
2. gradual (slow increase of symptoms);
3. against Qatar top respiratory ways;
4. against flu;
5. against other diseases with the typical beginning, weighting of the general condition, inexplicable the main suffering;
6. atypical options (belly-aches, areas in heart, sharp deterioration of the general health).

The main symptoms at an acute pneumonia:

A.Zhaloby:

1. cough (dry or with phlegm allocation);
2. stitches (amplifying at breath and cough);
3. short wind;
4. blood spitting;
5. fever, feeling of heat;
6. general weakness, headache.

B. Revealed at fizikalny inspection of the patient:

1. backlog of the struck party of a thorax in the breath act;
2. strengthening voice trembling and bronkhofoniya on the defeat party;
3. shortening of a perkutorny sound over the inflammatory center;
4. breath change (bronchial, rigid, weakened);
5. emergence of pathological noise (noise of a friction of a pleura), damp rattles and krepitatsiya;
6. short wind;
7. cyanosis;
8. decrease HELL, tachycardia, pulse change;
9. possible signs of warm insufficiency.

The main syndromes at acute pneumonias

A.Sindrom of the general inflammatory changes:

1. body temperature increase;
2. feeling of heat, fever;
3. changes of ostrofazovy indicators of blood (leucocitosis, with shift to the left, increase in SOE, a 2-and b - globulins, emergence of SRB);

B. Intoksikatsionny syndrome:

1. general weakness;
2. headaches;
3. decrease in appetite;

V.Sindrom of inflammatory changes in a pulmonary fabric:

1. shortening of a perkutorny sound;
2. strengthening of voice trembling and bronkhofoniya;

3. change of nature of breath (rigid, bronchial, weakened);
4. emergence of damp rattles;
5. characteristic radiological data (infiltratsiya);
6. emergence of a phlegm (with inflammation elements).

G.Sindrom of involvement of other bodies and systems:

1. changes of cardiovascular system;
2. changes of a gastroenteric path;
3. changes from kidneys;
4. changes of the central nervous system.

Clinical practice shows that emergence of acute bacterial pneumonia is quite often connected with a number of conditions, or the risk factors contributing to a disease.

Virus infection of the top respiratory ways. Deskvamatsiya the epiteliya and even necroses, characteristic for a virus infection, conduct to violation of mukotsiliarny transport and drainage function of bronchial tubes that is favorable for reproduction of other microorganisms. It is promoted also by oppression of cellular and humoral immunity and decrease in activity of alveolar macrophages.

Obstruction of a bronchial tree. At chronic obstructive bronchitis, asthma, and as in cases of local obstruction (a foreign matter, the tumor, the post-inflammatory sclerosis deforming and a stenoziruyushchy bronchial tube) violation of drainage function of bronchial tubes and mukotsiliarny transport conducts to a delay of slime and reproduction of microorganisms among which pneumococci and Hemophillus influenzae are more often found.

Immunodeficiencies. Now it is possible to define a condition of humoral and cellular immunity. Inferiority T-and V-lymphocytes promotes more frequent infection stafilokokky, gramotritsatelny sticks and a virus of simple herpes.

Alcohol. Patients with alcoholism are predisposed to pneumonia owing to decrease in a pharyngeal reflex and an incidental aspiration of rotoglotochny flora. They observe violations of mukotsiliarny transport in summary an insufficient food and especially at exhaustion secondary immunoscarce conditions develop.

Inhalation of toxic substances and smoking break function resnitchaty an epiteliya and slime production, oppress function of alveolar macrophages. Some toxic substances (especially irritating action) cause hypostasis of a mucous membrane of bronchial tubes that promotes microflora reproduction.

Injury of a thorax. Pain limits respiratory excursions and conducts to hypoventilation that is accompanied by reduction of drainage function of bronchial tubes. It is promoted also by impossibility of an effective expectoration. Similar frustration arise and when hypoventilation is caused by thorax deformation, for example, at кифосколиозе.

Postoperative period. After operations on abdominal organs and a thorax pain causes hypoventilation and impossibility of an effective expectoration. Besides, the anesthesia breaks mukotsiliarny transport, and decrease in a pharyngeal reflex creates conditions for an aspiration of contents of a throat and even a stomach. At such patients the risk of an intrahospital infection is increased.

Stagnant insufficiency of heart. Blood circulation violation in lungs conducts to reduction of activity of all protective factors of respiratory system. The

strengthened reproduction of microorganisms is promoted also by hypostasis of fabrics of a lung at left ventricular insufficiency.

Old age. Exhausting diseases. All factors of protection of respiratory system can suffer, but expressiveness of violation of each of them can be various.

Various nonspecific damaging impacts on an organism (a stress, overcooling, emotional shocks) can promote pneumonia development. The mechanism of this phenomenon remains not clear, the essential role of violation of the central nervous regulation is supposed.

Syndrome of a pleural exudate. Pritupleniye of a perkutorny sound (in the presence of free liquid in a pleural cavity the slanting top border with the highest point on the back axillary line is sometimes found) and absence or sharp weakening of vesicular breath are important signs of a pleural exudate; its existence proves to be true at radiological research.

Syndrome atelectasis: the pritupleniye of a perkutorny sound has no the slanting top border peculiar to a pleural exudate, but at an auskultatsiya sharp easing or absence of vesicular breath also is found. Exact diagnostics is possible at radiological research.

Bronchitis syndrome. Cough with a phlegm, rattles in lungs at an auskultatsiya, testifying to filling of a gleam of bronchial tubes firm (dry rattles) or liquid (damp rattles) contents, are observed usually at accompanying bronchitis. It is possible to determine calibre of the struck bronchial tubes by nature of rattles: from peeping and whistling dry and melkopuzyrchaty damp rattles at defeat of small bronchial tubes to buzzing dry and krupnopuzyrchaty damp when involving large bronchial tubes.

Depending on clinical and radiological changes it is possible to allocate three options of malosimptomny pneumonia: clinical, radiological, mixed.

At clinical option at patients pneumonia symptoms (cough, perspiration, weakness, short wind, temperature increase of a body, a stitch are observed at breath). At objective survey it is possible to define restriction of mobility of pulmonary edge on the sick party, strengthening of voice trembling and a bronkhofoniya, to listen to sonorous damp melkopuzyrchaty rattles and a krepitatsiya. At a blood test find small leucocitosis, increase in SOE. At the same time pnemonichesky infiltrate does not find reflection at usual radiological inspection. It is possible to explain it a weak ekssudatsiya in an alveolar fabric in the presence of focuses of an infiltratsiya of the small sizes (but having widespread disseminirovanny character) which is concealed at the expense of kompensatorny swelling of the healthy alveoluses keeping lightness of lungs. At last, there are restrictions of possibilities of the most radiological method which allows to reveal an infiltratsiya in lungs only in 70 % of cases. If at the patient with rentgenonegativny (klinicheky) option of pneumonia the computer tomography is carried out, the melkoochagovy infiltratsiya of alveoluses is registered, as confirms the pneumonia diagnosis.

Therefore, in the presence of the expressed clinical semiology of pneumonia, but in the absence of infiltratsiya signs on the usual roentgenogram it is not necessary to reject the pneumonia diagnosis completely. At rentgenonegativny pneumonia the analysis of clinical and laboratory indicators allows not to allow hyper diagnostics.

The radiological option of pneumonia at poor clinical data or their absence is characterized by an accurate radiological picture of pneumonia. Breath usually free or in rare instances constrained. Short wind is absent or is slightly expressed. The painful symptom is not present, or the patient starts to complain of this or that unpleasant feeling in a breast after leading questions. It is same more than a reserved semiotics assessment of cough and a phlegm. The patient can show complaints to a headache, weakness, weakness an indisposition and other symptoms, anything specially not speaking about lungs. Patients quite often transfer this form of pneumonia standing, without changing an operating mode. It is possible to tell that there are no results of radiological research, everything would remain hidden and not deciphered.

The mixed option of malosimptomny pneumonia is characterized by small expressiveness as symptoms of an illness and results of laboratory diagnostics, and radiological picture of pneumonia. Diagnostics of malosimptomny pneumonia is complicated that can cause inopportuneness of treatment and promote the long course of a disease.

Low level of diagnostics of pneumonia is not always connected with direct violations of diagnostic principles or a rough oversight; the matter is that in a frame of reference, established as standard, there are discrepancies, defects and contradictions.

Bronkhopnevmoniya - Acute ochagovy pneumonia

Beginning: sharp (at primary and communication with overcooling, an infection of the top respiratory ways), an aggravation of infectious process or the reason, capable to cause an inflammation (Aspiration, toxic influence; trauma, stagnant insufficiency; TELA; ателектаз at the expense of an obturatsiya of a bronchial tube, share collapse; a giprodinamiya in the postoperative period; the post-hemorrhagic; the neurogenetic – strokes etc.; beam reaction, burns, freezing injuries – at secondary pneumonia).

Syndromes:

1. intoksikatsionny syndrome (subjectively and objectively) – weakness, perspiration, decrease in working capacity, a headache, decrease in appetite, an artralgiya, a mialgiya; depending on severity, to heat, a fever, loss of consciousness, vascular collapse, jaundice, toxic hepatitis, haemo lytic anemia, a gepatosplenomegaliya, a limfadenopatiya, fever and a hyperthermia, and as immune violations – nephrite etc.;
2. bronkholegochny syndrome. Subjectively: cough, a phlegm, a thorax pain, connected with breath. Objectively: “a syndrome of consolidation of a pulmonary fabric” (depending on localization): backlog of the struck share in the breath act; strengthening of voice trembling and bronkhofoniya; shortening of a pulmonary sound over the inflammatory center; the rigid or weakened breath, damp melkopuzyrchaty ringing rattles; krepitatsiya.
3. Laboratory syndrome of the general inflammatory changes: leucocitosis, with formula shift to the left, SOE acceleration, hyperphibrinogen and a gipergaptoglobulinemiya, increase in SRB, difinilaminovy test, sialovy acids; a disproteinemiya (at the expense of a 2 and b - globulins);

иммунограмма – increase in indicators of a humoral link of immunity – the Central Election Commission, IqM and IqG; in blood – coming bacteremia; repeated cytologic and bacteriological researches of a phlegm.

4. The syndromes, able to take place: bronchitis, atelectasis, pleural exudate.
5. Radiological picture: indistinct not intensive ochagovy shadows to 1-1,5 cm; strengthening of pulmonary drawing in an adjacent fabric of a lung; expansion of a shadow of a root of a lung; consolidation of an intershare pleura; not constantly, decrease in mobility of the chart.

NB! In the first 3-5 days at ochagovy diseases radiological undergo changes only in pulmonary drawing, then there are polymorphic centers with dim borders, undergo fast dynamics against treatment.

Plevropnevmoniya - Krupoznaya pneumonia

Beginning: sharp, mainly at persons of young age (since giperergichesky reaction takes place) and at children from 6 months to one year after overcoolings; it is characterized by a heavy or heaviest current, a stadiynost.

Syndromes:

1. the intoksikatsionny syndrome – is presented a bright tremendous fever, a hyperthermia, herpetic vysypaniye on a face of herpes labialis et nasalis on the defeat party, cyanosis of lips, a giperemiya of the person and a flush on the defeat party, the expressed tachycardia, can be hypotonia and cardiovascular insufficiency with development of ortostatichesky collapse and hypostasis of lungs. The hyperthermia within 2-4 days also decreases lytically or critically. Jaundice, anemia, nephrite with an oliguriya, toxic hepatitis and other autoimmune complications is possible
2. the bronkholegochny syndrome – early arises pain at a breath, cough in the first days a little productive, then – office of a rusty (brown) steklovidny viscous phlegm (at the expense of erythrocytes);
3. laboratory syndrome of the general inflammatory changes – neytrofilny leucocitosis (more than 10-15´ 10 l), shift to the left – increase to 15 % of palochkoyaderny neutrophils, emergence метамиелоцитов in peripheral blood, toxic granularity; stressful aneozinofiliya; SOE acceleration; biochemical – a giperfibrinogenemiya, emergence of SRB, decrease in albuminovo-globulinovy factor, increase in a 2-and – globulins, increase in sialovy acids, a gipergaptoglobinemiya, increase in LDG, phybrinogen; a giperbilirubenemiya (for the account hemolisis – indirect reaction), anemia; in urine - a protein and a tsilindruriya, manifestation in urine; at research of gas composition of blood: Gipoksemiya, gipokapniya, respiratory alcolosis; a phlegm viscous, "rusty" in which find erythrocytes, epiteliya, a large amount of protein, leukocytes, and activators.
4. the total answer of a share with early involvement of a pleura;
5. radiological picture:

- homogeneous infiltratsiya (shares);
- clear convex boundary of the struck share and absence of changes in an adjacent fabric;
- the shadow of a root of a lung is expanded;

- distinct pleural reaction: consolidation of a pariyetalny pleura, an exudate arising in early terms;
- restriction of mobility of a diaphragm.

NB! Recurrence of a current is characteristic. Allocate 4 stages:

The I stage (inflow) from 12 hours to 3rd days:

- backlog of the struck site in the breath act;
- perkutorno-box or timpanichesky sound;
- noise: there can be a noise of a friction of a pleura.

The II stage (red opecheneniye) from 1 to three days:

- perkutorno dullness over the struck share accrues;
- strengthening of voice trembling, bronkhofoniya,
- gentle krepitatsiya (crepitacio indux) in initial stages;
- bronchial breath over a defeat zone.

The III stage (gray otecheneniye) from 2 to 6 days:

- strengthening of voice trembling, bronkhofoniya (can be weakened in the presence of a pleural exudate);
- perkutorno dullness;
- breath bronchial, then becomes rigid;
- rattles, krepitatsiya it ceases to be listened, at an exudate noise of a friction of a pleura;
- at an exudate – easing or breath disappearance.

IV stage (permissions):

- rigid breath (replaced bronchial) passes to the vesicular;
- dullness weakens perkutorno;
- "final" krepitatsiya (crepitacoi redux) and melkopuzyrchaty damp rattles which by the time of recovery disappear are listened;
- very seldom the inflammatory process of bronchial tubes causing their obturatsiya develops.

Interstitsialnye of pneumonia

1. Mainly virus and mikoplazmenny, legionellezny.
2. The iterstitsialny fabric of one-two segments of a lung without formation of considerable continuous infiltrate in a lung is surprised.
3. Cough, short wind, cyanosis, breast pain.
4. Poverty of an auskultativny picture.
5. Activator identification (it is easier in epidemic).
6. Radiological: peribronkhialny changes, root expansion, strengthening of pulmonary drawing, lack of an accurate infiltratsiya.

NB! According to a number of authors the term “interstitsialny pneumonia” is not well-founded, as does not reflect changes in respiratory department of lungs.

Severity of pneumonia

Symptoms	**Lung**	**Average**	**The heavy**
Frequency of breath in 1	No more than 25	About 30	40 and more

Pulse	90	100	more than 100
Temperature	38oC	To 39oC	40oC and more
Gipoksemiya	No	The unsharp	the expressed
Extensiveness of defeat	1-2 segments of one share	1-2 segments with 2x the parties or whole	More than 1 share or polisegmentarno
Insufficiency of blood circulation	No	The frequent	the distinct

Complications

A.Legochnye:

1. pleurisy (serous, purulent);
2. nagnoitelny processes in lungs (abscesses);
3. empiema pleurae, pyopneumothorax;
4. development of an asthmatic component;
5. long current;
   а) clinically incompleteness of an acute pneumonia within 4 weeks; strengthening of signs of warm insufficiency;
   б) absence of clinical effect from antibiotics, a refrakternost to treatment;
   в) existence of poorly expressed intoksikatsionny syndrome, and as changes in peripheral blood, biochemical shifts;
   г) preservation, or a retsidirovaniye of the low-expressed symptoms of an illness (rare, unproductive cough, an astenizatsiya, a subfebrilitiya etc.);
   д) fizikalny data: dry or productive cough, strengthening vesicular (or rigid) breath or easing, dry and damp rattles, sound pritupleniye;
   e) radiological: strengthening of pulmonary drawing, expansion of roots, an infiltratsiya in паренхиме lungs, is changeable – pleura reaction, fall of transparency of pulmonary fields.
6. postpnevmotichesky pneumosclerosis (chronic pneumonia);
7. sharp respiratory insufficiency;
8. syndrome of respiratory frustration of adults;
9. spontaneous pheumothorax;
10. sharp pulmonary heart.

B.Vnelegochnye:

1. infectious and toxic shock;
2. DVS-sindrom;
3. sepsis;
4. septic endocarditis;
5. pericarditis (purulent), mediastenitis;
6. secondary purulent meningitis, encephalitis;
7. infectious and toxic defeat of kidneys, liver, joints, urinary ways, otitises;

8. infectious and allergic myocardites with development of progressing warm insufficiency.

Features of clinic of acute pneumonias from an infecting agent

Pnevmokokkovy krupozny pneumonia (plevropnevmoniya)

It is characteristic:

1. sharp beginning;
2. fever;
3. symptoms of typical pneumonia (a pritupleniye of a perkutorny sound, the bronchial breath, expressed leucocitosis and neytrofilny shift to the left; a homogeneous dense zateneniye at a X-ray, a thicket in bottom or an average share, cough dry with emergence for 3-4 days of "a rusty phlegm".

Staphylococcal pneumonia

Heavy option of pneumonia which can be shown in the form of a krupozny inflammation or (more often) the ochagovy.

It is characteristic:

1. arises at the weakened persons more often;
2. expressed intoxication and organism exhaustion;
3. plentiful phlegm, quite often orange shade;
4. heavy current;
5. big bent to disintegration of a fabric of a lung and bakterimichesky metastasises – in a kidney, a liver, a brain;
6. high lethality;
7. weak efficiency of antibacterial therapy;
8. sharp neytrofilny leucocitosis and toxic granularity of leukocytes;
9. radiological – existence small (less than 1 cm in diameter) and large cavities (a cyst, abscess).

Streptococcal pneumonia

Srednetyazhely option of pneumonia. It is more often shown by an ochagovy form, is more rare – a krupozny inflammation.

It is characteristic:

1. there is a communication with a virus or streptococcal infection;
2. not rough, gradual beginning;
3. phlegm mucopurulent, it is not rare with blood impurity;
4. frequent and early accession empiema pleurae;
5. radiological – the numerous small roundish centers, are more often process bilateral.

Less often in comparison with staphylococcal pneumonia disintegration of a pulmonary fabric with formation of cavities is observed.

Enterokokkovy pneumonia

The clinic is similar with streptococcal, but a current heavier. Radiological symmetric infiltrates in both lungs. The lethal outcome is often connected with purulent complications of a pleura.

The pneumonia caused by the klebsiyelly

Heavy form of pneumonia.

It is characteristic:

1. the clinic is similar to clinic pnevmokokkovy pneumonia;
2. fall ill at the age of 40-65 years more often;
3. always there is a factor contributing to a disease (alcoholism, diabetes, an aspiration);
4. serious general condition of the patient, sometimes – critical;
5. during treatment it is possible emergence of the new centers in lungs earlier healthy sites;
6. considerable leucocitosis, neytrofilny shift to the left, toxic granularity of leukocytes;
7. phlegm viscous, sometimes with an unpleasant smell, cherry color;
8. radiological – contours of the struck shares owing to an abundance of inflammatory exudate are increased also various outlines; early symptoms of suppuration and disintegration of a pulmonary fabric;
9. frequent complications – resistant to treatment lung abscess;
10. bad forecast, especially at at the wrong time begun treatment; mortality reaches 10 % and more.

Mikoplazmenny pneumonia

It is characteristic: the endemichnost, meets at the age of 20-30 years, in the organized collectives (school, educational institutions, barracks) more often.
Clinic: gradual beginning, head and muscular pains, signs of ORV and dry cough. Forecast good.

Virus pneumonia

(virus inflyuenets, herpes, reovirus, adenovirus)
It is characteristic: head and muscular pains, anorexia, purulent phlegm, ARVI signs; in blood insignificant leucocitosis.

Riketsiozny pneumonia

It is characteristic:
1. incubatory period of 2-4 weeks;
2. the sudden begun fever;
3. retrobulbarny headaches;
4. not heavy current;
5. moderate increase of SOE;
6. radiological – the multiple rather large centers.

Ornitozny pneumonia

It is characteristic:
1. incubatory period of 1-3 weeks;
2. fever, 2-3 weeks anorexia;
3. the dry cough passing to an expectoration of a purulent phlegm;
4. radiological – the gentle lucheobrazny zateneniye going from roots of lungs (1-2 weeks) the 2nd week – the intensive centers of a zateneniye.

Diagnostics

The group by **a kliniko-pathogenetic principle** taking into account an epidemiological situation and risk factors is more rational from the practical point of view:

1. pneumonia at patients in closely cooperating collectives – the most frequent option of house pneumonia; arise in the absence of background pathology, a thicket in a winter season in certain epidemiological situations (virus epidemics, the outbreaks of a mikoplazmenny infection, Ku fever etc.); main activators: pneumococcus, mycoplasma, legionella, viruses;
2. pneumonia at patients with the serious somatic illness which existence leads to violations in system of local protection of lungs, to deterioration of a mukotsiliarny road clearance, pulmonary haemo dynamics and microcirculation, deficiency of humoral and cellular immunity; often meets at the elderly; main activators: a pneumococcus, staphilococ, a gemofilny stick, klebsiella, моракселла and other gramotritsatelny microorganisms, the mixed flora;
3. nozokomialny (hospital) pneumonia, is one of forms of hospital infections and takes the third place after an infection of urinary ways and a ranevy infection; the lethality makes about 20 %; arise at patients in blocks of intensive therapy, resuscitation units. Risk factors are IVL, existence трахеостомы, bronkhoskopichesky researches, the postoperative period (especially after torakoabdominalny operations), a massive antibiotikoterapiya, septic conditions; main activators: gramotritsatelny flora, staphilococ, as a rule, resistant to метициллину;
4. aspiratsionny pneumonia; risk factors are: alcoholism, epilepsy, comas, sharp violation of brain blood circulation and other neurologic diseases, swallowing violations, vomiting, existence of a nazogastralny probe, etc.; main activators: anaerobs (main microflora of a rotoglotka), gramotritsatelny flora;

   5. pneumonia at patients with immunoscarce conditions, in particular, with various tumoral diseases, haemoblastoses, miyelotoksichesky agranulotsitozy, drug addiction, HIV infection against chemotherapy, immunosuppressive therapy; main activators: gramotritsatelny flora, mushrooms, pnevmotsist, cytomegalovirus, Nocardia.

   The knowledge of a range of activators of this or that option of pneumonia allows to prove a choice of the corresponding antimicrobic preparation.

Differential diagnostics follows it is carried out with interstitsialny or alveolar hypostasis of a lung, atelektazy, a pleural exudate of a various origin, a lung bruise, a pulmonary emboliya, various blackouts in lungs; tubercular infiltrate, pnevmonity at system vasculitis and toxic the pnevmonity.

The importance in diagnostic process belongs to classification schemes. In the international classification of diseases of the X-th revision division of pneumonia depending on an etiologichesky factor is presented, and it allowed to speak about nosological independence of each pneumonia. Without the indication of an etiology the diagnosis "pneumonia" has syndromic character. Classification of pneumonia by kliniko-morphological signs causes objections as similar forms can be caused by various etiologichesky agents.

Intrahospital pneumonia is diagnosed, if within the first 2nd days of stay in a hospital there were no clinical and radiological symptoms of pneumonia. They

quite often are called by resistant strains staphilococов, and it is recommended to apply to treatment oksacillin, combinations of antibiotics to inhibitors b - lactamaz, ciprophlocsaccin. At the aspiratsionny pneumonia connected with gramotritsatelny flora and/or anaerobs, are recommended aminohlicozids or combinations cephalosporins the 3rd generation with metronidazole.

Atypical pneumonia is caused by a mycoplasma, legionelly, hlamidiya.

The majority of experts recognize diagnostic value of bacteriological researches though the confidence of what this flora was the causative agent of pneumonia at this patient, not always happens absolute. As the activator consider a microorganism which contents exceeds 1 million microbic bodies in 1 million phlegm (106), and for mushrooms – more than 102. The diagnostic importance increases, if a high caption of antibodies to pulmotropny anti-genes comes to light. Perspective use of polimerazny chain reaction is represented.

In the final wording of the diagnosis should be reflected: a nosological form with the indication of an etiology (rough, the most probable, verified); existence of background pathology; localization and prevalence of a pulmonary inflammation (a segment, a share, one - or bilateral defeat); severity of pneumonia; existence of complications (pulmonary and extra pulmonary); phase (heat, permission, rekonvalestsentsiya) and dynamics (outcomes) of a disease.

Urgent conditions at an acute pneumonia

Infectious and toxic shock (ITSh)

Allocate 3 stages of ITSh:

1. intoxication without shock signs;
2. the "warm" shock, being characterized low peripheral resistance and high warm emission;
3. "cold" shock, with high peripheral resistance and low warm emission.

The first stage of ITSh on clinical manifestations reminds the course of sharp inflammatory bronkholegochny process: a fever, a hypothermia, hyper ventilation with development respiratory alcolosisa, sometimes nausea, vomiting, a diarrhea, concern or block.

The second stage of ITSh is also clinically outlined: pallor of extremities with akrotsianozy, tachipnoe, hypotonia, block, an oliguriya. Decrease in arterial pressure and an oliguriya at high warm emission marks complete development of the second stage of ITSh. A lethality of patients in the second stage of ITSh about 40 %.

The third stage of ITSh is characterized by the expressed violations of microcirculation, gipoksemiy, metabolitny shifts. Integuments pale, cold to the touch. Quite often appear petekhialny rash. Tachycardia and tachipnoe remains, over lungs damp rattles, and over heart – “a gallop rhythm” are listened. The oliguriya increases, body temperature can decrease. Is defined deep metabolic alcolosis. When progressing shock patients usually run into a stoporozny condition. The lethality in the third stage of ITSh reaches 60 %.

Syndrome of the disseminirovanny intra vascular fibrillation (DVS)

Criteria of development DVS-sindroma are:

1. microcirculation violation (sharp pulmonary, nephritic, hepatic insufficiency), violation of cerebral microcirculation (dizziness, faints, confusion of consciousness);
2. development of gemorragiya (petekhialno-spotty on skin, hematomas on a place of injections, spontaneous bleedings and hemorrhages of various localization);
3. laboratory violations of a hemostasis (from hyper - before more or less deep hypocoagulation). Level control antitrombin III (decrease), plazminogen (decrease) is obligatory. Decrease in quantity trombisyts, lengthening of trombinovy time, decrease phybrinogen is taken into consideration.

Persistent hypotonia

Persistent falling the HELL is connected with giperrergichesky reaction to a pneumococcus and products of its activity.

Hypostasis of lungs

Genez: pneumonia can aggravate left ventricular insufficiency and lead to development of a haemo dynamic form of hypostasis of lungs at the expense of excessive increase of hydrostatic pressure in capillaries of a small circle of blood circulation.

The toxic hypostasis of lungs connected with increase in permeability of a vascular wall under impact on it of toxic products, mainly microbic toxins.

Sharp respiratory insufficiency

The reasons of its development are diverse:

1. switching off of large volume of a pulmonary fabric from gas exchange at drain pneumonia;
2. discrepancy between ventilation and a perfuziya of lungs (unevenness of ventilation) owing to the expressed violations of bronchial passableness because of plentiful formation of a pathological secret and a bronchospasm;
3. blood shunting in lungs owing to development DVS-sindroma;
4. development of toxic or haemo dynamic hypostasis of lungs, etc.

Treatment

Patients with pneumonia, as a rule, should be hospitalized.

Absolute indicators for hospitalization:

1. age till 6 months, more than 65 years;
2. ChD of more than 30 in a minute;
3. sharp vascular insufficiency;
4. confusion of consciousness;
5. extra pulmonary centers of an infection;
6. serious laboratory deviations (leykopeniye less than 4,0 or leucocitosis more than 30,0, gipoksemiya, giperkapniya);
7. decrease in function of kidneys;
8. defeat more than one share;
9. septitsimiya signs;
10. serious previous illness, especially bronkho-pulmonary and cardiovascular systems.

Treatment tactics:

1. Diet: plentiful to 3 liters a day drink (at диурезе not less than 1,5 l), a high-grade food (table No. 15);
2. Etiotropny therapy: antibiotics – taking into account sensitivity to microflora, or control clinical. Begin with antibiotics of a wide range. Depending on severity – mono - or polytherapy with various ways of introduction. In the absence of effect – in 1-2 days to replace antibiotics.

Empirical antibacterial therapy is appointed taking into account group of pneumonia

1. VNEBOLNICHPYE Kommunalnye
   - b-antibiotics (penicillin, ampicillin, amoksicillin, etc.); macroleads; phtorchinolons; TsS II; combinations AMK/KK; ampicillin+sulbactam+macrolids or phtorchinolon
2. Nozokomialnye
   - phtorchinolons; glicopeptids (vankomicin, teykoplanin); aminohlicozids (amicacin); imipeny, meropeny; TsS II;
3. At immunokompromentirovanny patients
   - b-antibiotics + aminohlicozids; aztrionam+ciprophlocsaccin; glicopeptids (vankomecin, teykoplanin); diflyucan (fluconazol); amphotericin In; erythromycin or new macrolids + rifampicin; contrimoksazol; tiabendazol; acyclovir; ganciclovir; piremetamin +sulfotiazin or other sulfanilamidny; ceftriaxoni; ampicillin (amoksicillin); amoxiclavi.
4. Aspiratsionnye
   - phtorchinolons; amicocin; ceftazidin; vankomicin, teykoplanin; imipiny; aztrionam; antisinegnoyny (temaflocsacin, lomeflocsacin); cefalosporins II-III generations; amoxiclavi with klavulanovy acid; b-antibiotics (azetroenam, flomkcef); b combinations - laktamny antibiotics with amikatsiny; clindamicin.
5. The atypical

- erythromycin and new macroleads; rifampicin; phtorchinolons; tetraciclins; trimetopry; azalids (azitromicini).

Duration of antibacterial therapy

Not complicated bacterial pneumonia – 3-4 more days after temperature normalization (under condition of normalization of a leykotsitarny formula).

Criteria of efficiency of antibacterial therapy is:

1. decrease in body temperature;
2. intoxication reduction;
3. improvement of the general condition;
4. normalization of a leykotsitarny formula;
5. reduction of degree of a gnoynost of a phlegm;
6. positive dynamics of auskultativny and radiological data. Efficiency is estimated in 24-72 hours.

NB! Fever and leucocitosis 2-4 days, rattles – can remain more than a week; radiological signs of an infiltratsiya – can be observed 2-4 weeks from an onset of the illness.

Combination of antibiotics

It is justified at treatment of pneumonia of a heavy current when the activator is not specified. Combinations of penicillin with aminoglikozidi, cephalosporins with aminoglikozidi are effective. Metronizodol combine with antibiotics at an anaerobny infection.

1. Pathogenetic therapy
    1. Dezintoksikatsionny therapy – intravenously, kapelno to 800 ml/days (plazmozameshchayushchy, hydrolyzates of proteins, 5 % of R-R of glucose etc.);
    2. Resolvents:

- acetilsalicylic acid;
- derivatives pirazaloni (amidopirini);
- indometacin, brufeni, voltareni, paracetamol etc.

    3. Antalgichesky means: (at pleural pains and absence of effect from anti-inflammatory preparations) – analgetics;
    4. Glyukokortikosteroida (small doses, a short course) are shown at:
        - languid course of pneumonia;
        - existence of a bronkhospatichesky syndrome;
        - expressed intoxication.
    5. Bronchial spasmolytics:
        - atropine, adrenaline and their derivatives,
        - selective b - adrenomimetics (berotek, ipradol etc.);
        - euphillini.
    6. Otkharkivayushchiye of means:
        - potassium iodide, root altey, preparations termopsis, acetilcistein, bromhecsin, unleavened wheat cakes of bronchial tubes.
    7. Immunomodulators:

- the medicamentous – anti-staphylococcal plasma and g - globulin, T-aktivin, pirogenal, prodigiozan, betin, anabol, salmazan, izoprinozin, timopoetin, timolin, V-aktivin, interferon and its derivatives, levamizol, diucifon, zicsorin, nucleinat sodium, etc.;
- the physical and chemical: plazmoferzis, quantum haemo therapy;
- the combined – in a combination to vitamins, microcells.

    8. Vitaminoterapiya (group B, C, A, E);
    9. Antioxidants – vitamin E, унитиол;
    10. Antiagreganta – heparin – to 40000-60000 PIECES/DAYS, dipiridamol 0,025-3 times a day, ksantol nicotinat 0,15-3 times a day, pentocsifillin 0,2-3 times a day;
    11. Rassasyvayushchiye – FIBS, an aloe, a placenta suspension, plazmol, etc., an autogemoterapiya;
    12. Anabolic steroids – nerabol, retabolil etc.;
    13. Cardiovascular means – camphor, кордиамин, сульфокамфокаин;
    14. Physiotherapy (after decrease in temperature):

- warm inhalations – aerosol therapy (the III-V class);
- Aeroinoterapiya;
- электрофорез (with antibiotics, rassasyvayushchy);

- alternating currents: Induktotermiya, UVCh, microwave oven, (DMV), KVCh;
- massage, revulsives;
- acupuncture;
- ЛФК;
- sanatorium treatment (in 6 months);
- Balneoterapiya (alkaline mineral waters);
- UFO-eritema, geliolecheniye.

Criteria of recovery

1. good general condition;
2. permanent normalization of temperature;
3. disappearance of local symptoms;
4. normalization of indicators of blood;
5. normalization of a radiological picture (lack of an infiltratsiya);

NB! Preservation of radiological changes at complete normalization of health of the patient is not the indication to continuation of antibiotikovy therapy.

The acute pneumonia is characterized by various violations of immunological reactance, degree and which features depend on an etiology, pathogenetic manifestations of pneumonia, prevalence, a process sharpness. The functional depression of cellular immunity, a perversion of activity of humoral immunity, intensity of autoimmune reactions, oppression of factors of natural protection is noted. The passing violations of the immune answer observed at acute pneumonias, usually do not demand purpose of immunomodulators. Immunokorregiruyushchy therapy is carried out in cases of the expressed imbalance of a regulatory link or a depression of a makrofagalny and effektorny killerny link of immunity.

In critical situations at pneumonia of the heaviest current as means of replaceable therapy of a syndrome of secondary deficiency of antibodies apply sterile liofilizirovanny endobulin before disappearance of sharp symptoms. Introduction endobulin in a dose 100¼ú/kg can be repeated masses of a body with intervals in 1 week.

For prevention of a syndrome of a disseminirovanny intra vascular fibrillation (DVS-sindroma) enter heparin hypodermically during the feverish period.

The second phase of a current of an acute pneumonia – a phase of clinical stabilization – is characterized by infiltrate formation at intoxication preservation.

For normalization of bronchial passableness are shown bronkholitichesky, diluting a phlegm and otkharkivayushchy. In the first days of an illness appoint cholinolitics (atropine, platiphilllini, atrovent) or the combined preparations containing them (solutan, efatin). Further combine adrenergichesky bronkhodilatator (berotek, salbutamol) and otkharkivayushchy means. Apply the preparations stimulating synthesis of a surfaktant (lasolvan, bromhecsin). Appoint polyvitaminic preparations. At tendency to the long course of pneumonia appoint fat-soluble antioxidants – tocopherol or aevit, kortikosteroidny and immunomodulating preparations.

Rassasyvaniye of inflammatory infiltrates means transition of an illness to a phase of functional restoration and by that in a rekonvalestsentsiya. In pneumonia permission to stimulation of processes of regeneration apply metiluracil, pentocsil,

potassium. For restoration of nonspecific resistance of an organism recommend to use biogene stimulators: extract of an aloe, FIBS, steklovidny body. Appoint adaptogens: extract, tincture of a root of a ginseng, Chinese limonnik inside, sublingvalno. Formation local is considered as a recovery form, though not the full. By this time of patients with an acute pneumonia write out from a hospital and transfer to an out-patient and polyclinic stage of treatment.

The heavy forms of pneumonia complicated infectious shock, hypostasis of lungs, DVS-sindromom, sharp vascular insufficiency, a respiratory distress-syndrome of adults, are subject to treatment in offices of reanimation or chambers of intensive therapy.

Indications to the combined treatment: a heavy current at the unknown activator; emergence against the expressed immunodeficiency (probability of a fungoid and pnevmotsistny etiology), accompanying diseases (often are caused by the mixed flora); existence of microbic associations, need of strengthening of bactericidal or bakteriostatichesky effect if it does not manage to be reached by safe increase in a dose.

To cancel an antibiotic at the easy course of pneumonia and absence of complications follows in 2-3 days after temperature normalization. Longer treatment by antibiotics, especially wide range of action, oppresses local protection of lungs, promoting decrease in kolonizatsionny resistance of a mucous membrane of respiratory ways, activization of opportunistic flora and superinfection development.

At patients with legionelezny, mikoplazmenny, staphylococcal pneumonia in the presence of complications, at advanced age duration of antibacterial therapy should make decompensations of soputstuyushchy diseases about 3 weeks.

Antibacterial therapy is intended only for elimination of microbic aggression and does not render the directed anti-inflammatory effect. Therefore existence of auskultativny and radiological signs of not completely resolved inflammation, increase in SOE at a normal blood count and permanent normalization of temperature, good health of the patient and absence of complications are not (a frequent medical error!) the indication to continuation of antibacterial therapy and the more so to antibiotic change.

Possible algorithms of treatment at bacteremia:

The 1st option – positive crops of blood are received (for the first time)

- fever is stopped by antibiotics of a wide range of action, but the sowed microflora is tolerant to used antibiotics – this empirical antibiotic mode proceeds;
- fever remains against used antibiotics, but the allocated bacteria are sensitive to applied antibiotics – therapy by the same antibiotics proceeds;
- fever remains at treatment by antibiotics, and the microorganism allocated at crops is not sensitive to these preparations – in addition appoint a preparation according to a sensitivity range

The 2nd option – repeatedly positive crops are received:

- if grampolozhitelny bacteria are revealed, in addition appoint vankomicin;

- if growth of gramotritsatelny aerobic bacteria is noted, it is necessary to pass to a new mode (we will assume, applied a combination of two b - laktamny antibiotics, it is possible to appoint ureidopennicillin + aminoglikozid).

How long to carry out empirical antibiotic therapy at normal temperature, the number of granulocytes is defining. If number of neutrophils more than 500 in to stop introduction of antibiotics it is possible after 7 days of normal temperature, but sometimes we recommend also longer introduction – till 14 days. Less certain is the situation when neurosinging (less than 500 neutrophils in 1 mkl) as carrying out treatment by antibiotics at normal temperature is dangerous development of a superinfection, resistant to used preparations, or emergence complications, and the treatment termination as is fraught with fever recurrence. After all it is possible to stop treatment at: a) number neutrophyl более100 in 1 mkl; б) total absence of the centers of an infection; в) at normal temperature during not less than 7 days. If cancellation of antibiotics is carried out to the period agranulocitoz, it is necessary to carry out attentive survey of the patient. If the infection is again revealed, therapy by the same antibiotics which were cancelled earlier is possible.

Prevention

1. Sanitary-and-hygienic actions;
2. Organism hardening (physical culture, shower, skis, swimming etc.);
3. Sanitation of the centers of an infection.

Forecast

At modern diagnostics and treatment the acute pneumonia comes to the end with recovery by the end of 3-4 weeks from the disease beginning.

Return development of clinical symptoms at a favorable current occurs by 7-14 day.

Radiological signs of an inflammation disappear on the 2-3rd week.

In 25-30 % of cases the long current is observed. Lethality about 1 %. The lethality is especially high at virus and bacterial and staphylococcal pneumonia at the elderly weakened people.

Acute respiratory viral infection (ARVI) — group of highly infectious virus diseases of the top respiratory ways, being transferred an airborne way and being characterized symptoms of infectious toxicosis. ARVI — the group of diseases uniting flu most widespread on the globe, paraflu, respiratory синцитиальную an infection, rinovirusny and adenoviral infections and other catarrhal inflammations of the top respiratory ways. In development the virus disease can become complicated a bacterial infection.

In a life the word "cold" sometimes belongs to manifestations of simple herpes on lips, instead of to a disease of respiratory ways.

Epidemiology

ARVI meet everywhere and are the most widespread infectious disease therefore completely to consider incidence it is impossible. Children of the first months of

life practically are not ill (thanks to relative isolation and the passive immunity received transplatsentarno). The greatest indicator is noted among children of the first years of life that is connected with visit of child care facilities by them (thus incidence of ARVI for the first year can reach the 10th time/year). Decrease in incidence in more senior age groups speaks acquisition of specific immunity after the suffered disease. On the average for a year each adult transfers ARVI not less often than 2 — 3 times. Specific weight of concrete diseases in the general structure of ARVI depends on an epidemic situation and age of patients. Cases when clinical manifestations of a disease are minimum are known and symptoms of infectious toxicosis are absent — such patients transfer ARVI "standing", being a source of infection of children. Now the virus nature practically for all so-called *catarrhal* diseases is authentically established.

Infection source

Source of ARVI is the sick person or in certain cases an animal or a bird which are dangerous from the moment of the termination of the incubatory period before the termination of the feverish period.

Transmission of infection

Practically all ARVI group is reported generally by an airborne way. Sometimes transfer of the causative agent of an infection is possible through subjects of use, a toy, linen or dishes.

Susceptibility

General and high. Relatively children of the first months the lives which have been given rise from mothers with circulating antibodies to ARVI activators. At absence at mother of protective antibodies newborns are susceptible to ARVI even. After the suffered infection resistant specific lifelong immunity, as a rule, is formed. The repeated disease is caused by infection with other virus from ARVI group

Etiology

ARVI is caused by various activators, among which not less than 5 various groups of viruses (viruses of paraflu, flu, adenovirusы, риновирусы, reovirusы, etc.) and their more than 300 subtypes. All of them very контагиозны (are infectious), as are transferred by an airborne way. There are data that viruses ARVI effectively extend and at corporal contact, for example, at handshake.

Patogenez

In an initial stage of an illness the virus breeds in entrance «infection gate»: to a nose, a nasopharynx, a throat that is shown in a look рези, cold, a persheniye, dry cough. The temperature usually does not raise. Sometimes in this process are involved mucous an eye and a gastroenteric path.

Then the virus gets to blood and causes symptoms of the general intoxication: a fever, a headache, an ache in a back and extremities. Activation of the immune answer leads to development by an organism of antibodies to a virus owing to what blood is gradually cleared of it and symptoms of intoxication weaken.

At a final stage of not complicated ARVI there is a clarification of respiratory ways from struck with a virus слоёв an epiteliya that is shown as cold and damp cough with an otkhozhdeniye of a mucous or purulent phlegm.

Clinical picture

The main symptoms of ARVI — cold, cough, a sneezing, a headache, a sore throat, eyeballs, vomiting, a liquid chair, feeling of weakness.

Differential diagnosis

In view of wide prevalence and heterogeneity of various sharp respiratory infections often there is a need of carrying out the differential diagnosis with a view of establishment of an exact etiology. The knowledge of principles of differential diagnostics of various ARVI is necessary for the prevention of various complications and correction of tactics of treatment of the patient. Most the ARVI frequent activators are flu (the sharp beginning, high temperature, possibility of development of heavy forms of an illness), paraflu (easier than at flu a current, throat defeat with risk of suffocation at children), an adenoviral infection (less expressed, than at flu the beginning, quinsy and a limfadenopatiya, defeat of a conjunctiva of eyes, strong cold, is possible liver defeat), an infection respiratory синцитиальным a virus (defeat of bronchial tubes and бронхиол, possibility of development of a bronkhopnevmoniya, easier and long, than at flu a current) [3].

Dispepsiya symptoms (vomiting, a chair razzhizheniye) should guard in respect of **a rotavirusny infection**.

At the expressed inflammation of almonds (especially frequent at an adenoviral infection) it is necessary to exclude **quinsy** and **infectious mononucleos**.

Strongly expressed fever can cause suspicions on **measles**, **scarlet fever**, etc.

From more exotic diseases which first symptoms can remind ARVI, it should be noted **hepatitises**, **AIDS** etc., therefore, if ARVI symptoms the last some weeks were preceded by the events dangerous in a type of infection with these diseases (contact to the sick hepatitis A, the unprotected sexual contact to the casual partner, intravenous injections in unsterile conditions), it is necessary to address immediately to the doctor.

There was a concept man's flu, is frequent with a sneer when many men have cold in shape назофарингита or ARVI is heavier, than women that men not in the right to declare weight of the condition, saying that they have actually a flu. That women so do not arrive is meant. Scientific justification for legitimacy of existence of concept «man's flu» as more the ARVI heavy form collects

Treatment

ARVI treatment generally the symptomatic. The increase in consumption of liquid, or «plentiful drink» during ARVI are not confirmed with medical proofs, according to the literary reviews, published in British Medical Journa. The regular use of vitamin C does not reduce chances of a disease cold, however allows to reduce its weight and duration Against the majority of ARVI activators now are not developed химиопрепараты and timely differential diagnostics is complicated. From febrifuges apply nonsteroid resolvents, among them paracetamol, and recently an ibuprofen.

Complications

Complications treat: bacterial rhinitises, sinusitis, otitises, tracheitises, pneumonia, meningitis, neuritis, радикулоневрит.

Prevention

At the height of an infection it is recommended to limit visit of mass actions, especially in the closed rooms, to avoid too close contact to patients as it is possible to wash more often than a hand. The same rules should be observed and the diseased: to take the sick-list, not to visit mass actions, to aspire to use as little as possible public transport, to avoid close contact with healthy, to carry a gauze bandage.

Also according to researches of NKTs Federal State Institution of an otorinolaringologiya of FMBA of Russia by an effective remedy of prevention of flu and ARVI deep washing of a nose by physiological solution is

Acute bronchitis - a diffuzny acute inflammation of a trakheobronkhialny tree. The acute bronchitis belongs to frequent diseases.

Acute bronchitis: reasons and mechanism of emergence of an illness

Acute bronchitis viruses (cause flu viruses, paragripgyuzny, adenovirusы, respiratory синцитиальные, clumsy, koklyushny, etc.), bacteria (staphilococи, streptococci, pneumococci, etc.); physical and chemical factors (dry, cold, hot air, nitrogen oxides, sulphurous gas, etc.).

Cooling, tobacco smoking, alcohol intake, chronic ochagovy infection in nazofaringealny area, violation of nasal breath, thorax deformation contribute to a disease. The damaging agent gets into a trachea and bronchial tubes with inhaled air, a gematogenny or limfogvnny way (uraemic bronchitis).

The acute inflammation of a bronchial tree can be accompanied by violation of bronchial passableness of the edematous and inflammatory or bronkhospastichesky mechanism. The giperemiya and swelling of a mucous membrane are characteristic; on walls of bronchial tubes in their gleam a mucous, mucopurulent or purulent secret; degenerate changes resnitchaty epiteliya. At heavy forms inflammatory process grasps not only a mucous membrane, but also deep fabrics of a wall of bronchial tubes.

Acute bronchitis: symptoms and clinical course

Bronchitis of an infectious etiology quite often begins against sharp rhinitis, laryngitis. At the easy course of a disease arise a sadneniye behind a breast, dry, damp cough, feeling of weakness, weakness is more rare. Fizikalnye signs are absent or over lungs cruel breath, dry rattles are defined. Body temperature subfebrilny or normal. The composition of peripheral blood does not change. Such current is observed more often at defeat of a trachea and large bronchial tubes.

At a srednetyazhely current the general malaise, weakness are considerably expressed, are characteristic strong dry cough with difficulty of breath and short wind, pain in the bottom departments of a thorax and the belly wall, connected with an overstrain of muscles at cough. Cough gradually becomes damp, the phlegm gains mucopurulent or purulent character. Over a surface of lungs rigid breath, dry and damp melkopuzyrchaty rattles are listened. Body temperature remains within several days subfebrilny. The expressed changes of composition of peripheral blood are not present. The heavy clinical course is observed, as a rule, at primary defeat бронхиол (see Bronkhiolit). Sharp symptoms of an illness abate by 4th day and at a favorable outcome completely disappear by 7th day. The acute

bronchitis with violation of bronchial passableness tends to a long current and transition to chronic bronchitis.
Hard sharp bronchitis of a toksiko-chemical etiology proceeds. The illness begins with painful cough with allocation of a mucous or krovyanisty phlegm, the bronchospasm (against the extended exhalation dry whistling rattles are listened) quickly joins and short wind progresses (up to asthma), respiratory insufficiency and a gipoksemiya accrue. Symptoms of sharp emphysema of lungs radiological can be defined. Breaks symptomatic эритроцитоз, indicators гематокрита raise.
Heavy current can accept and sharp dust bronchitis. Except cough (in the beginning dry, and then damp), the expressed short wind, cyanosis of mucous membranes are noted. The box shade of a perkutorny sound, rigid breath, dry rattles are defined. It is possible small эритроцитоз. The increased transparency of pulmonary fields and moderate expansion of roots of lungs radiological comes to light.

Acute bronchitis: illness treatment

Confinement to bed, plentiful warm drink with honey, raspberry, lime color; warmed-up alkaline mineral water; acetilsalicylic acid on 0,5 g 3 times a day, ascorbic acid to 1 g day, vitamin A on 3 mg 3 times pass; mustard plasters, banks on a thorax.

Acute bronchitis: illness prevention

Elimination of a possible etiologichesky factor of an acute bronchitis (a dust content and a gas contamination of working rooms, overcooling, smoking, abuse of alcohol, a chronic and ochagovy infection in respiratory ways, etc.), and also the measures directed on increase of resilience of an organism to an infection (a hardening, food vitaminization).

The acute bronchitis - frequent manifestation of ARVI, proceeds without clinical signs of bronchial obstruction. At children of the first half of the year bronchitis is caused by hlamidiya. At preschool children and school students bronchitis accompanies a mikoplazmenny infection – its difference: asymmetry of damp rattles, poor catarrhal manifestations from the top respiratory ways, reddening of a conjunctiva of eyelids without the separated. At teenagers bronchitis is caused also by Chlamidia pneumoniae, sometimes as a debut of asthma of the late beginning.

II. METHODICAL INSTRUCTIONS TO THE STUDENT.

Problem: statement of the diagnosis of ARVI, acute bronchitis, pneumonia VOP tactics.

The instruction to independent work on the analysis and the solution of practical situations.

№	**Work stages**	***Recommendations and councils***
1.	Acquaintance with a case	At first familiarize with a case. Reading, do not try to analyze a situation at once
2.	Acquaintance with the set situation	Once again attentively read information. Allocate those paragraphs which seemed to you the important. List the factors stated in the description of a case. Try to characterize a situation. Define that in it the main thing, and that the minor. Try to allocate the main thing
3.	Identification, formation and justification of a key problem and podprobly	Problem: the clinical symptoms speaking for an acute bronchitis to differentiate with other bronchitis and to define VOP tactics
4.	Diagnostics and situation analysis	In the analysis of a situation answer questions: - the disease beginning from ARVI symptoms - contributing factors of emergence of an acute bronchitis - classification of bronchitis - character of cough - clinical forms of bronchitis - what tactics of VOP at bronchitis
5.	Choice and justification of ways and problem cures	Transfer all possible funds and ways of a solution in this situation.
6.	Development of actions for realization of offered permission of a problem situation	Whether any actions for elimination of the above-stated symptom are necessary in this situation and prove if necessary use graphic organizers.

The instruction to group work on the analysis and the solution of practical situations

Work stages	***Recommendations and councils***
Coordination of idea of a situation and problem	Prove and coordinate various ideas of members of group of a situation, a problem and подпроблеме
The analysis and assessment of the offered ways and problem cures, choice of priority idea of a solution	Prove and estimate the offered options of ways and means of a solution. Choose priority in your opinion idea of a solution
Development of mutually acceptable option of a solution and detailed development of its realization	Develop mutually acceptable option of a solution and detailed development of its realization - Clearly and precisely describe the

	reason of an acute bronchitis - Prove VOP tactics
Preparation for presentation	Issue results of work in the form of oral presentation on behalf of group. Prove and solve a question who will represent results of group work: the leader or all group with division of functions between participants depending on the tasks solved by them during the analysis and a solution. Do not go deep into details

Leaf of the analysis and solution of a problem situation

The name of a stage of work with a case	**Maintenance of a stage of works**
Acquaintance with the set situation in a case	The review of the set concrete situation and definition of a task of information essential to the solution
Situation analysis	In the analysis of a situation answer the following questions: 1-beginning of a disease from ARVI symptoms 2-classification of bronchitis 3. - clinical forms of bronchitis 4-character of cough 4-contributing factors of emergence of an acute bronchitis 5. - clinical symptoms telling for this diagnosis 6-laboratory data 7-what tactics of VOP at an acute bronchitis
Problem justification	Justification of a key problem and its components
Choice of alternatives of a solution	Formulation of possible alternatives of the solution of a situational task
Development and justification of a solution	Detailed development and justification of the concrete decision

The table of an assessment of individual work with a case

Participants	**Criteria and assessment indicators**				
	The analysis of the current SI - max 1,0	Justification problems max 0,5	Choice of ways and problem cures max 0,5	Detailed development and justification of the	General point (max 2,5)

	tuatsiya			concrete solution of max 0,5	
1.					
2.					
№					

2,0-2,5 points – are excellent"
1,5-2,0 points – are good"
1,0-1,5 points – are satisfactory"
less than 1,0 points - are unsatisfactory"

System of an assessment of options of a group solution

1. Each group receives 2 estimated points. It can give them at once all to one version of the decision or divide into two (1:1; 0,5:1,5 etc.), not including an assessment of own version of the decision.
2. All got points by each version of the decision develop. Wins the decision which has gathered the greatest number of points. In disputable cases it is possible to take vote.

Table of an assessment of options of a group solution, point

Group	**Alternative options of a solution**			
	1	2	3	№
1.				
2.				
№				
Sum				

Assessment of presentation of the offered decision

Group	**Completeness and clarity of presentation (1-20)**	**Presentation of the presented presentation (1-20)**	**Mass character and activity of members of group (1-20)**	**Originality of offered decisions (1-20)**	**Acceptability to legislative norms (1-20)**	**Total amount of the gathered points (max 100)**

1						
2						
№						

III. VERSION OF THE SOLUTION OF CASE PREPODAVATELEM KEYSOLOGOM.

Situation No. 1

1. The symptoms listed above in a case, specify that at the child acute obstructive bronchitis.

Acute obstructive bronchitis, бронхиолит - proceeds a syndrome of bronchial obstruction. For бронхиолита the abundance of melkopuzyrchaty rattles and respiratory insufficiency, for obstructive bronchitis – whistling rattles is characteristic. Weight of a condition is connected with obstruction degree.

2. Differential diagnostics

Symptom	**Obstructive bronchitis**	**Stenozi-ruyushchy laryngitis**	**Aspiration syndrome**	**Congenital stridor**
Beginning	the sharp	the sharp	the gradual	the gradual
Character of cough	ekspiratorny	inspirator-ny	ekspirator-ny	inspirator-ny
Change of breath in zvisi-pave from change of position of a body	Does not change	Does not change	Does not change	At vertical situation improves
Swallowing violation	no	no		it is complicated
Diagnostic criteria		Survey ENT SPECIALIST-doctor		Survey ENT SPECIALIST-doctor

3. Treatment

1. A confinement to bed during a hyperthermia and in a current of 2-3 days after it. Diet. Plentiful drink
2. Distracting therapy.
3. At need - euphillini 5-6 mg/kg
4. Adrenomimetik-Alupent tab-20 mg / кгсутки
5. Antibiotikoterapiya (ультрацеф)

6.Lacto G 1 кап x 2 times.

Situation No. 2

1. The symptoms listed above in a case, specify that the patient has a pneumonia
Bacterial pneumonia – inflammatory process of the bottom departments of respiratory ways In difference from ARVI at pneumonia cough with mucous гпойной a phlegm (or rusty), at perkussii-shortening of a perkutorny sound, auskultativno – damp ringing melkopuzyrchaty rattles or a krepitatsiya, and at an acute bronchitis diffused dry or damp rattles against pharyngitis and conjunctivitis symptoms.При sharp бропхите cough in the beginning dry, then productive, on a rentgenografiya – changes of a pulmonary fabric are absent

2. Differential diagnostics

Symptom	**Obstructive bronchitis**	**ACUTE BRONCHITIS**	**ОРВИ**	**BACTERIAL PNEUMONIA**
Beginning	the sharp	the sharp	the sharp	Sharp нли podostroy
Character of cough	ekspiratorny	At the beginning of dry then productive with a mucous phlegm	the dry	Damp phlegm слизисто purulent or rusty
Characteristic symptoms	Does not change	Intoxication symptoms indisposition fever short wind субфебрилитет Aus. - diffused dry or damp rattles pharyngitis and conjunctivitis Symptoms R-of a pulmonary fabric of change отсут.	Indisposition fever 2-4 days fever headache pharyngitis rattles dry cough Duration of 10-14 days	Intoksikatsionny syndrome cyanosis of Perkussiya-pritupleniye ауск. - damp ringing melkopuzyrchaty rattles or a krepitatsiya

Iv.Keys-technology of training on practical occupation.

Model of technology of training

Subject **Problem**	**Cough.** ARVI, pneumonia, bronchitis. clinic, diagnostics. Rehabilitation ways, medical examination plan, questions of primary and secondary prevention. Indications to hospitalization and the direction to the expert. **ACUTE BRONCHITIS, PNEUMONIA**
Quantity of hours - 2	Quantity of the being trained – 8-10
Form of educational occupation:	Practical class in deepening and expansion of knowledge of students directed by the diagnosis of an acute bronchitis, and also to ability and to prove the diagnosis, and also competently to appoint treatment from position
Plan of practical occupation	- Introduction in a problem - Updating of knowledge - Work with cases in minigroups - Presentation of results - Discussion, assessment and choice of the best option of strategy - Performance of practical skills. Conclusion. Assessment of activity of groups and students, extents of achievement of the purpose of educational occupation.
Purpose of educational occupation	To deepen and expand knowledge of students directed by the diagnosis of ORZ, ARVI, an acute bronchitis, pneumonia . Students will gain skills: - analysis of a practical situation - adoption of reasonable decisions at ARVI, an acute bronchitis, pneumonia medicines - development of logic thinking
Tasks of the teacher	***Results of educational activity:*** - classify bronchitis, pneumonia - explain the mechanism of development of bronchitis, pneumonia - analyze a situation presented in a case - on the basis of the analysis of a situation make the reasonable decision on its permission - do the total conclusion, reasonably it protect - carry out practical skills
Methods training:	Keyes-stadi, discussion, practical skills (survey palpation perkussiya auskultatsiya of lungs general analysis of a phlegm)

Tutorials:	Case, methodical instructions to the student
Form of education:	Individual, face-to-face, work in groups
Training conditions:	The audience adapted for work in groups
Monitoring and assessment	Supervision, quiz, presentation, vzaimootsenka**,** assessment.

Technological card of educational occupation

Work stage	**Content of activity**	
	Teacher	**Students**
I stage **Introduction in a problem** 10 minutes	1.1 Calls a problem, the purpose, tasks and planned results of educational activity. 1.2 1.2. Acquaints with a work mode on occupation and criteria of an assessment of results (A met.rek-tsiya for students) 1.3 Explains appointment a case – a stage and its influence on development of professional knowledge 1.4 Раздаёт case materials also acquaints with algorithm of the analysis of a situation (A met.rek-tsiya for students) 1.5 Gives a task independently to carry out the analysis and to bring results in «A leaf of the analysis of a situation»	Listen. Write down. Independently study contents of a case and individually fill a leaf of the analysis of situations.
II stage **The main** Analysis and analysis of 20 minutes.	2.1. ***Carries out*** quiz on purpose to make active knowledge being trained on a subject: - Clinical classification of bronchitis, pneumonia, ARVI - Mechanism of emergence and development sharp брохита, pneumonia, ORZ, ARVI - Types and character of cough - Differential diagnostics of strictly bronchitis, pneumonia, ORZ, ARVI The inspection plan at these diseases - What therapeutic actions are applied	Answer questions

	at sharp bronchitis, pneumonia, ORZ, ARVI 2.2 ***Divides*** students into groups Reminds work rules in group and ruled discussions. 2.3. ***Gives*** a task:	Share on groups
Preparation of 30 mines	- To carry out and discuss results of individual work with a case (A leaf of the analysis of a situation») in minigroups - To estimate and choose optimum options of actions for treatment - Preparation to презентацииОРЗ, ARVI, an acute bronchitis, a ypnevmoniya 2.4. ***Coordinates***, advises, directs educational activity.	Carry out an educational task
Performance of 20 mines, on 10 mines in each group	Checks and estimates results of individual work: leaf of the analysis of a situation 2.5. ***Will organize*** presentation following the results of the done work on the solution of a case, discussion and a vzaimootsenka.	Groups hold presentation of results of work. Participate in
Discussion of 10 mines	2.6. ***Makes comments***, turns attention to the actions chosen in the course of the analysis on treatment 2.7. ***Reports*** the version of the decision	discussion, ask questions, estimate
10 minutes	2.8. ***Will organize*** performance by students of practical skills	
III stage **The final estimated** 20 minutes	3.1. ***Sums*** up occupation, rez-you generalize educational deyat-ti, declares estimates the individual-y and collaboration 3.2. ***Emphasizes*** value a case-stadi and its influence on development of future expert 3.3. ***Gives*** homework	Listen Express the opinion Write down.

Prepared: Khaytimbetov J.Sh.