GUIDELINES TO PREPARE FOR CLASSROOM TRAINING IN OCCUPATIONAL DISEASES

GENERAL ISSUES OF THE OCCUPATIONAL DISEASES. OCCUPATIONAL DISEASES CAUSED BY INDUSTRIAL AEROSOLS

Aim: to develop skills and to acquire experience relevant to the management of patients with occupational diseases. To study the subject of occupational diseases. To study the classification of professional harmfulness. To give characteristics to the physical, chemical and biological factors of occupational environment and working process. Peculiarities of clinical examination of patients with professional diseases. Main task of examination of working capacity. To develop skills and to acquire experience relevant to management of patients with occupational diseases, in particular those with pneumoconioses. To study classification of the pneumoconioses, etiology, and pathogenesis, clinical and roentgenological characteristic of silicosis, diagnostic, treatment, prevention and examination of working capacity. To study etiology, pathogenesis, clinical and roentgenological picture of silicatosis (asbestosis, cement pneumoconioses, talcosis). Complications, examination of working capacity. Peculiarities of pneumoconioses of electric welder. Peculiarities of diagnostic and treatment chronic bronchitis and chronic obstructive pulmonary disease of dusting etiology.

Professional orientation of students. Occupational pathology is the section of clinical medicine that studies the question of etiology, pathogenesis, clinic, diagnostics, medical treatment and prevention of professional diseases. We understand the professional illnesses as a disease caused by professional harmfulness. One of the basic forms of human activity is the work that favorably affects for its health. At the same time some types of work at certain conditions, at the non-observance of necessary sanitary-hygienic rules, can become the reason for the development of professional diseases. That’s why future doctors must know professional pathology to prevent, diagnose and treated professional diseases.

Pneumoconioses is widespread dust diseases and can be found in workers of mining, coal industries, metalworking, electric welding, ceramic and other industries. Silicosis – pneumoconioses, caused by inhalation of dust, composed of free silicon dioxide (SiO2). Silicatosis is pneumoconioses, caused by inhalation of mineral dust, which includes dioxide of silicon and other elements (magnesium, calcium, iron, aluminium). The most widespread types of silicates that cause the development of silicatosis are: asbestos, talc, olevin, cement, etc. Other groups of pneumoconioses are carboconiosis, metalloconiosis, and pneumoconioses from organic dust, pneumoconioses from mixed dust.

Educational goal:

1. Determine main etiological factors and pathogenesis of occupational diseases.
2. Learn the modern classification of occupational diseases.
3. Define the clinical symptoms of occupational diseases.
4. Make the plan of additional investigation of the patient and analyze their results.
5. Make the clinical diagnosis of the patient with occupational diseases.
6. Prove occupational genesis.
7. Prescribe the proper treatment and prevention.
8. Make work ability verification.
9. Determine main etiological factors and pathogenesis of occupational diseases.
10. Learn the modern classification of occupational diseases.
11. Define the clinical symptoms of occupational diseases.
12. Make the plan of additional investigation of the patient and analyze their results.
13. Make the clinical diagnosis of the patient with occupational diseases.
14. Prove occupational genesis.
15. Prescribe the proper treatment and prevention.
16. Make work ability verification.
17. Determine main etiological factors and pathogenesis of pneumoconiosis.
18. Learn the modern classification of pneumoconiosis.

19. Define the clinical symptoms of pneumoconiosis.
20. Make the plan of additional investigation of the patient and analyze their results.
21. Make the clinical diagnosis of the patient with pneumoconiosis.
22. Prove occupational genesis.
23. Prescribe the proper treatment and prevention.
24. Make work ability verification.
25. Determine main etiological factors and pathogenesis of Occupational bronchial asthma and exogenous alveolitis.
26. Learn the modern classification of Occupational bronchial asthma and exogenous alveolitis.
27. Define the clinical symptoms of Occupational bronchial asthma and exogenous alveolitis.
28. Make the plan of additional investigation of the patient with Occupational bronchial asthma and exogenous alveolitis and analyze their results.
29. Make the clinical diagnosis of the patient with Occupational bronchial asthma and exogenous alveolitis.
30. Prove occupational genesis of bronchial asthma and exogenous alveolitis.
31. Prescribe the proper treatment and prevention of Occupational bronchial asthma and exogenous alveolitis.
32. Make work ability verification for Occupational bronchial asthma and exogenous alveolitis.
33. Determine main etiological factors and pathogenesis of COPD.
34. Learn the modern classification of COPD.
35. Define the clinical symptoms of COPD.
36. Make the plan of additional investigation of the patient and analyze their results.
37. Make the clinical diagnosis of the patient with COPD.
38. Prove occupational genesis.
39. Prescribe the proper treatment and prevention.

40.Make work ability verification.

The student must know:

1. Etiology and pathogenesis of occupational diseases.
2. Clinical symptoms of occupational diseases.
3. Modern classification of occupational diseases.
4. Methods of diagnostics of occupational diseases.
5. Methods of treatment of occupational diseases.
6. Methods of proving occupational genesis of occupational diseases.
7. Principles of work ability verification.
8. Etiology and pathogenesis of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis.
9. Clinical symptoms of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis.
10. Modern classification of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis.
11. Methods of diagnostics of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis.
12. Methods of treatment of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis.
13. Methods of proving occupational genesis of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis.
14. Principles of work ability verification.

The student must be able:

1. To choose the symptoms of occupational diseases from the history data.
2. In examination of the patient to choose the symptoms of occupational diseases.
3. To make the scheme of investigation.
4. To define the type and the severity of the occupational diseases.
5. To determinate the treatment depending on the type and degree of occupational diseases.
6. To prescribe the proper treatment for the patient with occupational diseases.

7. To prove occupational genesis.
8. To make work ability verification and prevention of occupational diseases.
9. To choose the symptoms of pneumoconiosis, COPD, Occupational bronchial asthma and exogenous alveolitis from the history data.
10. In examination of the patient to choose the symptoms of pneumoconiosis COPD, Occupational bronchial asthma and exogenous alveolitis
11. To make the scheme of investigation.
12. To define the type and the severity of the pneumoconiosis COPD, Occupational bronchial asthma and exogenous alveolitis
13. To determinate the treatment depending on the type and degree of pneumoconiosis.
14. To prescribe the proper treatment for the patient with pneumoconiosis COPD, Occupational bronchial asthma and exogenous alveolitis
15. To prove occupational genesis of pneumoconiosis COPD, Occupational bronchial asthma and exogenous alveolitis
16. To make work ability verification and prevention.

!Questions for discussion!

1. What is the professional harmfulness and what are the occupational diseases?
2. In what century were the first publications made describing the clinical picture of occupational diseases?
3. Classification of the professional harmfulness.
4. History facts of occupational diseases.
5. How to study the professional route (anamnesis) of the patient.
6. Classification of occupational diseases.
7. Principles of the diagnostics of occupational diseases.
8. Principles of the prevention of occupational diseases.
9. Principles of the treatment of occupational diseases.
10. What is the previous and periodical medical examination?

11. What is industrial dust? Classification of industrial dust.
12. What is pneumoconioses?
13. Classification of pneumoconioses.
14. Etiology and pathogenesis of silicosis.
15. Clinical picture, X-ray of silicosis.
16. Main three complaints of silicosis?
17. What is silicatosis?
18. Describe etiology and clinical signs asbestosis.
19. Differential diagnostic of pneumoconioses.
20. Complications of pneumoconioses.
21. How often the prophylactic medical examination of working of the factory, where is the contact with occupational dust, must be make?
22. Which complication is most frequent in patients with silicosis?
23. Treatment and prevention of pneumoconioses.
24. What is pneumoconioses of electric welder?
25. Clinical picture and peculiarities of pneumoconioses of electric welder.
26. Examination of the working capacity of pneumoconioses.
27. Etiology, pathogenesis and clinical signs of byssinosis.
28. Specific signs and symptoms of chronic dust bronchitis and chronic obstructive pulmonary disease of dusting etiology.
29. Principles of management of patients with chronic bronchitis and chronic obstructive pulmonary disease of dusting etiology.

OCCUPATIONAL DISEASES, CAUSED BY PHYSICAL FACTORS AND OVEREXERTION OF SEPARATE ORGANS AND SYSTEM

(PART I)

(Vibration disease, altitude sickness and decompression diseases)

Aim: to develop skills and to acquire experience relevant to the management of patients with occupational diseases, in particular those with vibration disease.

To study students to put vibration disease diagnosis, that is caused by local and general vibration of different parameters, to study methods of functional diagnostics and treatment of the patients with vibration disease.

To study students to diagnosed altitude sickness and decompression sickness, methods of clinical diagnostics, to study principles of treatment and prophylaxis of occupational diseases, caused by physical factors.

Professional orientation of students. Vibration is one of the most wide-spread harmful factors of the industrial environment, transport, that cause numerous quantities of vibration disease

occasions. Vibration disease is an occupational disease, caused by vibration. Altitude sickness is a disease that results from a considerable and fast decrease of the partial pressure of oxygen (p02) in ambient gas medium. The caisson disease is a pathological condition that develops owing to the formation of gas bubbles in blood and tissues in case of a decrease of external respiration (in a man on leaving caisson and emergence).

Educational goal:

1. Determine main etiological factors and pathogenesis of vibration disease and neurosensorial deafness.
2. Learn the modern classification of vibration disease and neurosensorial deafness.
3. Define the clinical symptoms of vibration disease and neurosensorial deafness.
4. Make the plan of additional investigation of the patient and analyze their results.
5. Make the clinical diagnosis of the patient with vibration disease and neurosensorial deafness.

6. Prove occupational genesis.

7. Prescribe the proper treatment and prevention.

8. Make work ability verification.

The student must know:

1. Etiology and pathogenesis of vibration disease and neurosensorial deafness.

2. Clinical symptoms of vibration disease and neurosensorial deafness.

3. Modern classification of vibration disease and neurosensorial deafness.

4. Methods of diagnostics of vibration disease and neurosensorial deafness.

5. Methods of treatment of vibration disease and neurosensorial deafness.

6. Methods of proving occupational genesis of vibration disease and neurosensorial deafness.

7. Principles of work ability verification.

The student must be able:

1. To choose the symptoms of vibration disease and neurosensorial deafness from the history data.

2. In examination of the patient to choose the symptoms of vibration disease and neurosensorial deafness.

3. To make the scheme of investigation.

4. To define the type and the severity of Vibration disease and neurosensorial deafness.

5. To determinate the treatment depending on the type and degree of vibration disease and neurosensorial deafness.

6. To prescribe the proper treatment for the patient with vibration disease and neurosensorial deafness.

7. To prove occupational genesis of vibration disease and neurosensorial deafness.

8. To make work ability verification and prevention of vibration disease and neurosensorial deafness.

!Question for discussion!

1. What is vibration?

2. What is vibration disease?
3. Etiology and pathogenesis of vibration disease.
4. Classification of vibration disease.
5. Specific signs and symptoms of vibration disease.
6. Main clinical syndromes in vibration disease.
7. Describe the angiodistonic and angiospastic (peripheral and central) syndrome.
8. Describe the arm autonomic and sensory polyneuropathy syndrome.
9. Clinical forms, stages and clinical manifestations of vibration disease.
10. Laboratory and instrumental examination of patients with vibration disease.
11. Differential diagnosis of vibration disease.
12. Principles of treatment and prevention of vibration disease.
13. What is altitude sickness?
14. What is decompression sickness?
15. Etiology and pathogenesis of altitude sickness and decompression sickness.
16. Specific signs and symptoms of altitude sickness and decompression sickness.
17. Principles of treatment and prophylaxis of altitude sickness and decompression sickness.
18. Examination of working capacity.

OCCUPATIONAL DISEASES, CAUSED BY PHYSICAL FACTORS AND OVEREXERTION OF SEPARATE ORGANS AND SYSTEM (PART II)

(Cochlear neuritis, occupational diseases caused by different types of radiation, ultrasound, and industrial microclimate)

The students must be able to diagnose occupational diseases of the locomotor system and connective tissue, of the peripheral nervous system, determine the severity, differentiate with other diseases, prove occupational genesis, prescribe the proper treatment, make work ability verification. The students must be able to diagnose neurosensorial deafness, determine the severity, differentiate with other diseases, prove occupational genesis, prescribe the proper treatment, make work ability verification. Occupational dyskinesia or coordination neurosis.

Noise is a chaotic combination of sounds, i.e. mechanical vibrations in the zone of frequency from 20 Hz to 16 kHz, which are perceived by a hearing analyzer. Under conditions of the production of the noise impact, there are engine testers, riveters, cutters, copper-smiths, weaver and spinners. Noise is an unfavorable factor of production environment impacts mechanization experts in agriculture, as well as repair shop workers.

!Questions for discussion!

1. What is neurosensory deafness?
2. Etiology and pathogenesis of neurosensory deafness.
3. Specific signs and symptoms of neurosensory deafness.
4. Main clinical syndromes of neurosensory deafness.
5. The general impact of noise on organism.
6. Examination of patients with vibration disease.
7. Principles of treatment and prevention of vibration disease.
8. Main etiological factors and pathogenesis of occupational diseases of skeleton-muscular system and connective tissue.
9. What are the main clinical syndromes of occupational diseases of skeleton-muscular system and connective tissue?

10. Create the plan of additional investigation of the patient with occupational diseases of skeleton-muscular system and connective tissue.
11. What the main drugs for the treatment of occupational diseases of skeleton-muscular system and connective tissue.
12. What is occupational dyskinesia. What are the etiological factors and patogenesis of occupational dyskinesia?
13. Principles of management of occupational dyskinesia.
14. Overheating of the organism (hyperthermia). Pathogenesis, classification, treatment.
15. Hypothermia. Pathogenesis, classification, treatment.

DISEASES CAUSED BY CHEMICAL COMPOSITIONS WITH PREDOMINANT AFFECTION OF THE BLOOD SYSTEM

Aim: to study the pathogenesis of chronic intoxication by benzol, clinical picture, diagnostics, treatment, prophylaxis and to make examination of working capacity. To study the toxicological characteristics of benzol and nitro compounds of benzol. To study pathogenesis, clinical picture, diagnostics, treatment and prophylaxis of intoxications.

To teach students to diagnose chronic intoxication by lead, to make a differential diagnosis and to prescribe treatment, to make an examination of working capacity.

Professional orientation of students. Among the various matters which are used in industry, there are connections that mainly influence a blood pigment - haemoglobin and transform it in methemoglobin. To such substances are taken derivatives of benzol, which molecules included amino (NH2) and nitro (NO2) groups. Amino- and nitrogroups of benzol are wide-spread in industry and used for making of organic dyes, pharmaceutical preparations, artificial resins, insecticides, and blasting matters and other.

Lead and its connections are widely used in trading and agriculture. Penetrating into the organism during a long period of time it accumulates and does not give any clinical manifestation. It enters the blood only under influence of certain factors and a clinic of intoxication occurs. This characteristic largely complicates diagnostics and prescription of antidote therapy.

Educational goal:

1. Determine main etiological factors and pathogenesis of intoxications by benzene, amino-, nitrobenzene.
2. Learn the modern classification of intoxications by benzene, amino-, nitrobenzene.
3. Define the clinical symptoms of intoxications by benzene, amino-, nitrobenzene.
4. Make the plan of additional investigation of the patient with intoxications by benzene, amino-, nitrobenzene and analyze their results.

5. Make the clinical diagnosis of the patient with intoxications by benzene, amino-, nitrobenzene.
6. Prove occupational genesis of intoxications by benzene, amino-, nitrobenzene.
7. Prescribe the proper treatment and prevention of intoxications by benzene, amino-, nitrobenzene.
8. Make work ability verification for intoxications by benzene, amino-, nitrobenzene.

The student must know:

1. Etiology and pathogenesis of intoxications by benzene, amino-, nitrobenzene.
2. Clinical symptoms of intoxications by benzene, amino-, nitrobenzene.
3. Modern classification of intoxications by benzene, amino-, nitrobenzene.
4. Methods of diagnostics of intoxications by benzene, amino-, nitrobenzene.
5. Methods of treatment of intoxications by benzene, amino-, nitrobenzene.
6. Methods of proving occupational genesis of intoxications by benzene, amino-, nitrobenzene.
7. Principles of work ability verification of intoxications by benzene, amino-, nitrobenzene.

The student must be able:

1. To choose the symptoms of intoxications by benzene, amino-, nitrobenzene from the history data.
2. In examination of the patient to choose the symptoms of intoxications by benzene, amino-, nitrobenzene.
3. To make the scheme of investigation for intoxications by benzene, amino-, nitrobenzene and carbon monoxide intoxication.
4. To define the type and the severity of intoxications by benzene, amino-, nitrobenzene.
5. To determinate the treatment depending on the type and degree of intoxications by benzene, amino-, nitrobenzene.
6. To prescribe the proper treatment for the patient with intoxications by benzene, amino-, nitrobenzene.

7. To prove occupational genesis of intoxications by benzene, amino-, nitrobenzene.
8. To make work ability verification and prevention of intoxications by benzene, amino-, nitrobenzene.

!Questions for discussion!

1. Pathogenesis of chronic intoxication by benzol.
2. Clinical picture and forms of intoxication by benzol.
3. Diagnostics of intoxication by benzol.
4. Treatment and prophylaxis.
5. Pathogenesis of chronic intoxication by nitrocompounds and oilsperses of benzol.
6. Clinical picture and forms of intoxication by nitrocompounds and oilsperses of benzol.
7. Diagnostic of intoxication by nitrocompounds and oilsperses of benzol.
8. Treatment and prophylaxis of intoxication by nitrocompounds and oilsperses of benzol.
9. Pathogenesis of chronic intoxication by carbon oxide.
10. Clinical picture and forms of intoxication by carbon oxide.
11. Diagnostics of intoxication by carbon oxide.
12. Treatment and prophylaxis of intoxication by carbon oxide.
13. Pathogenesis of lead intoxication.
14. Main symptoms of lead intoxication.
15. Clinical picture and forms of lead intoxication.
16. Principles of treatment of patients with intoxication by lead.
17. Prophylaxis of intoxication by lead.

DISEASES CAUSED BY CHEMICAL COMPOSITIONS WITH PREDOMINANT AFFECTION OF THE NERVOUS SYSTEM. OCCUPATIONAL INTOXICATION BY CHEMICAL PESTISIDES

Aim: to develop skills and to acquire experience relevant to the management of patients with occupational diseases, in particular, those with intoxication by tetraethyllead, manganese, and mercury.

To study etiology, pathogenesis, clinical picture, and stages of the intoxication, diagnostics, treatment and prevention of intoxication by tetraethyllead, by manganese, and by mercury. To study etiology, pathogenesis, clinical picture and stages of the intoxication, diagnostics, treatment and prevention intoxication by pesticides/

To study toxicological characteristics of phosphorus organic and arsenic substances, chlorine organic and mercury organic substances that are used in agriculture. To study their etiology, pathogenesis, clinical picture, diagnostics, to make differential diagnostics and to the prescribed treatment, to make an examination of working capacity. To study the main principles of emergency treatment of acute professional intoxications in place of accident and in hospitals.

Professional orientation of students. Professional neurotoxicosis – it is chronic professional intoxications in the clinical picture of which are prevailed by neurological symptoms.Widespread agriculture is connected with the usage of pesticides and diseases of agricultural cultures. That’s why there are many peoples, who contact with pesticides. Under certain consequences of their usage intoxication may appear, that why doctors should know about the toxic properties of pesticides, their actions on organisms and be able to diagnose intoxications. During the last years with the development of chemical industrials and using of chemical substances which have contained an influence on the organism there are cases of acute and professional intoxications. That’s why doctors must know the treatment of acute professional intoxications.

Educational goal:

1. Determine main etiological factors and pathogenesis of Intoxication by pesticides and toxic hepatitis.
2. Learn the modern classification of Intoxication by pesticides and toxic hepatitis.
3. Define the clinical symptoms of Intoxication by pesticides and toxic hepatitis.
4. Make the plan of additional investigation of the patient with Intoxication by pesticides and toxic hepatitis and analyze their results.
5. Make the clinical diagnosis of the patient with Intoxication by pesticides and toxic hepatitis.
6. Prove occupational genesis of Intoxication by pesticides and toxic hepatitis.
7. Prescribe the proper treatment and prevention of Intoxication by pesticides and toxic hepatitis.
8. Make work ability verification for Intoxication by pesticides and toxic hepatitis.

The student must know:

1. Etiology and pathogenesis of Intoxication by pesticides and toxic hepatitis.
2. Clinical symptoms of Intoxication by pesticides and toxic hepatitis.
3. Modern classification of Intoxication by pesticides and toxic hepatitis.
4. Methods of diagnostics of Intoxication by pesticides and toxic hepatitis.
5. Methods of treatment of Intoxication by pesticides and toxic hepatitis.
6. Methods of proving occupational genesis of Intoxication by pesticides and toxic hepatitis.
7. Principles of work ability verification of Intoxication by pesticides and toxic hepatitis.

The student must be able:

1. To choose the symptoms of Intoxication by pesticides and toxic hepatitis from the history data.
2. In examination of the patient to choose the symptoms of Intoxication by pesticides and toxic hepatitis.
3. To make the scheme of investigation for Intoxication by pesticides and toxic hepatitis.
4. To define the type and the severity of Intoxication by pesticides and toxic hepatitis.
5. To determinate the treatment depending on the type and degree of Intoxication by pesticides and toxic hepatitis.
6. To prescribe the proper treatment for the patient with Intoxication by pesticides and toxic hepatitis.
7. To prove occupational genesis of Intoxication by pesticides and toxic hepatitis.
8. To make work ability verification and prevention of Intoxication by pesticides and toxic hepatitis.

!Questions for discussion!

1. Pathogenesis of intoxication by tetraethyl lead, by manganese, by mercury.
2. Clinical picture and forms of intoxication by tetraethyl lead, by manganese, by mercury.
3. Diagnostics of intoxication by tetraethyl lead, by manganese, by mercury.
4. Treatment and prophylaxis of intoxication by tetraethyl lead, by manganese, by mercury.
5. Examination of working capacity.
6. Toxicological characteristics of chemical poisonings.
7. Classification of chemical poisonings.

8. Etiology and pathogenesis of intoxication
by chlororganic compounds, organophosphorus compounds, mercuric organic compounds, compounds which contain arsenic.
9. Clinical picture and stages of intoxication
by chlororganic compounds, organophosphorus compounds, mercuric organic compounds, compounds which contain arsenic.
10. Diagnostic and treatment of the patients with intoxication by chemical poisonings.
11. Prevention of intoxication.
12. Methods of antidote therapy.
13. Symptomatic therapy.