

MEDICAL UNIVERSITY – PLOVDIV

MEDICAL FACULTY

**SECOND DEPARTMENT OF INTERNAL MEDICINE
SECTION OF OCCUPATIONAL DISEASES AND TOXICOLOGY**

**PROGRAMME FOR OCCUPATIONAL DISEASES AND
TOXICOLOGY**

CURRICULUM - MEDICAL SPECIALTY

Accepted by the Department Council with protocol

№ 39/30.01.2020

Approved by the Faculty Council on 08.07.2020

CURRICULUM

Discipline	Exam in semester	Hours				Hours in years and semester	
		Everything	Lectures	Practical exercises	Credits		
Occupational Diseases and Toxicology	VI						
		45	15	30	2	1/2	VI

Name of the discipline:

OCCUPATIONAL DISEASES AND TOXICOLOGY

Type of discipline according to unified state requirements:

Obligatory

Level of education:

Master /M/

Forms of education:

Lectures, exercises, self-preparation.

Training course:

3rd year

Duration of training:

One semester

Horarium:

15 hours lectures, 30 hours practical exercises

Teaching aids:

Multimedia products; audio-visual materials; authentic materials, posters, medical history, projects, tables, diagrams, and other non-verbal visuals, consistent with the lectures and exercises' topics; discussions; demonstration of clinical cases and diagnostic methods and devices; clinical data and paraclinical studies for diagnosis and interpretation; therapeutic

agents and schematics of nosological units; normative documents on occupational diseases related to the disclosure of recognition procedure for the occupational origin of certain disease, criteria for occupational origin based diagnosis of diseases, list of occupational diseases, etc .; practical situational tasks; reference materials for developing students' skills for individual practice; thematic referrals; preventive programmes.

Assessment forms:

tests, discussing the topic of the practical exercise, solving clinical cases, writing an essay

Formation of the mark:

The assessment is formed of current semester academic control

Assessment aspects:

Participation in discussions, solving clinical cases, tests, writing an essay

Semester examination:

Yes / Entry Test, Written and Oral Exam.

State Examination:

No.

Leading Lecturers:

Habilitated lecturers from the Department of Occupational Diseases and Toxicology.

Department:

Second Department of Internal Medicine

ANOTATION

The course "Occupational Diseases and Toxicology" enables: to acquire knowledge about the etiological risk factors of the working environment and the labor process (physical, chemical, biomechanical, biological, dust, fibers, aerosols, gases, smoke and vapours) and household toxic agents (medicines, industrial and household poisons, agricultural plant protection products, technical liquids, toxic gases, biological poisons from plants and animals, narcotics) and the circumstances in which they may arise; awareness of the pathophysiological mechanisms that determine occupational diseases and household intoxications; knowledge of typical clinical manifestations of the impact of occupational risk factors and xenobiotics on the human body; acquisition of diagnostics and treatment skills, poison recognition methods and first-aid in intoxications, specializing in specific detoxication and antidote healing techniques; knowledge of the criteria for occupational diagnosis of diseases, disclosure of a recognition procedure for the occupational origin of certain disease; awareness of the occupational diseases expertise; preventive measures.

MAIN TASKS OF THE CURRICULUM PROGRAMME

Acquiring and learning of knowledge and skills for diagnosis and adequate behavior in patients with suspected occupational disease or acute poisoning with xenobiotics:

- mastering of the peculiarities of occupational and toxicological history and

physical status;

- objectification of occupational risks: interpretation of the production characteristic, protocols for the investigation of the working environment and other documents on occupational exposure;

Formation of a working diagnosis and differential diagnosis;

- appointment of basic and specific studies;
- Clinical evaluation - interpretation of laboratory and instrumental data, development of specific and non-specific complexes of syndromes, differential diagnosis, and acquisition of skills for a correct therapeutic approach;

Behavior in first medical aid, early specialized care, treatment;

Acquainting with the normative documents related to occupational diseases and skills to manage them;

Knowledge of the differences between occupational disease, occupational accidents and work-related diseases;

- knowledge of the principles for the diagnosis of occupational diseases and the criteria for assessing the occupational origin of the diseases;
- knowledge of the principles of occupational disease expertise;
- preparation of documentation with specificity for toxicology and occupational diseases;
- application of all modern forms, methods and means for primary (prevention of the occurrence of occupational disease), secondary (early detection of occupational disease) and tertiary (elimination of long-term effects of occupational disease and improvement of patient prognosis) prevention as a collection of medical and non-medical events to achieve better health and quality of life through isolation of risk factors (prevention of premorbidity), disease prevention and reducing their consequences.

EXPECTED RESULTS

After completing the training, students must:

- be familiar with the normative documents related to occupational diseases and skills to manage them;
- have mastered knowledge of the most common occupational diseases, occupational accidents and work-related illnesses and behavior;
- have acquired professional knowledge of acute and chronic chemical trauma and mode of action in such pathology;
- have knowledge of the principles of prevention and expertise of these disabilities.

LECTURES PROGRAM-OCCUPATIONAL DISEASES
3rd course, VI semester

№	Theme	Hours	Date
1.	Introduction to occupational pathology. Legislation covering administration of occupational diseases in the Republic of Bulgaria .Definition of occupational disease,classification, list of occupational diseases. Basic principles of diagnostics, treatment, expertise and medical prophylaxis. .	2 h	
2.	Occupational poisoning with plastics Occupational poisoning with metals - lead, mercury, cadmium, manganese, chromium, nickel, arsenic -absorption, metabolism, excretion,pathogenesis, features in the clinical picture of chronic occupational intoxications , early diagnosis, differential diagnosis,treatment. Principles of antidote therapy	2 h	
3.	Chronic occupational intoxications with organic solvents - petrol, benzene, amino and nitro derivatives of benzene - clinic, diagnostics, exposition tests, treatment. Occupational intoxications with gaseous chemical compounds - chlorine,sulfur, nitrogen, fluorine and CO. Pesticide intoxications - classification, pathogenesis, clinical manifestations, treatment, prophylaxis.	2 h	
4.	Occupational diseases of the nervous system (radiculopathy, mono- and polyneuropathies, encephalopathies) and musculoskeletal (epicondylitis, tendomyosis, de Quervain's disease, tendonitis, peri-arthritis, bone-injuries)system	2 h	

5.	Vibration disease - definition, etiology, pathogenesis, classification. Clinical features and particularities in Vibration Disease course of general and local vibration impact. Differential diagnosis, principles of treatment and medical expertise of patients with vibration disease.	2 h	
6.	Pneumoconiosis - classification, etiology, pathogenesis. Silicosis, silicosis - asbestosis, talcosis, kaolinosis, coal pneumoconiosis - clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise. Occupational neoplasms	2 h	
7.	Occupational allergic diseases. Occupational bronchial asthma. Bisinosis. Hypersensitive pneumonitis. Occupational skin diseases - etiology, pathogenesis, criteria for diagnosis, differential diagnosis, treatment, medical expertise.	2 h	
8.	Occupational diseases of the hearing, vestibular and visual analyzer, upper respiratory tract. Occupational diseases due to biological factors	1 h	

All: 15 hours

PRACTICAL EXERCISE PROGRAM ON OCCUPATIONAL DISEASES

III COURSE, VI SEMESTER

No	Theme	Hours	Date
1.	Basics of occupational pathology. Definition, classification, list of occupational diseases. Basic principles of diagnostics, treatment, expertise and medical prophylaxis.	2 h	

2.	Occupational metal intoxications - diagnostic principles and criteria , labor-expert assessment	2 h	
3.	Occupational plastics disorders	2 h	
4.	Pneumoconioses - definition, classification. Silicosis. Silicatoses.	2 h	
5.	Occupational allergic diseases - etiology, diagnostic criteria, treatment, expertise. Chronic occupational bronchitis - classification, etiopathogenesis, diagnosis,criteria for occupational diagnosis, treatment, expertise	2h	
6.	Occupational diseases of the nervous and musculoskeletal system.	2 h	
7.	Vibration disease due to hand-arm and whole-body vibration exposure. Principles and methods of diagnosis of occupational diseases by vibration and biomechanical factors.	3 h	

All: 15 h.

CLINICAL TOXICOLOGY PRACTICAL EXERCISE PROGRAM
III course, VI semester

№	Theme	ЧАСОВЕ Hours	ДАТА Date
1.	<p>Organization and structure of toxicological care in Bulgaria. Etiology, epidemiology, classification of poisonings. Basic terms and concepts in clinical toxicology.</p> <p>Toxic-Allergic Shock Etiology.</p>	3 h	
2.	Pathogenesis, diagnosis, principles and methods of acute poisoning therapy. Unified therapeutic scheme.	2 h	
3.	Acute poisoning with neurotropic drugs (benzodiazepines, barbiturates, neuroleptics, antidepressants)- peculiarities of brain function depression, clinical course, diagnostic criteria, differential diagnosis. Therapeutic principles and methods.	2 h	
4.	<p>Acute poisoning with narcotic analgesics-classification, pathogenesis, clinical syndromes, diagnostic and therapy criteria.</p> <p>Acute poisoning with antipyretics (aspirin, paracetamol), antihypertensive drugs and cardiac glycosides.</p>	2 h	
5.	<p>Acute poisoning with pesticides (organophosphorus, organochlorine, carbamates and dithiocarbamates, pyrethroids). Acute poisoning with inorganic acids and bases. Pathogenesis, clinical features and course. Diagnostic criteria. Early and late complications. First medical care and life-saving actions. Therapeutic principles and methods.</p>	2 h	
6.	<p>Poisoning with biological poisons - snake poison, arthropods, mushrooms. Diagnosis, phaloid mushroom intoxication, emergency pre-hospital medical care, hospital treatment.</p> <p>.</p>	2 ч.	
7.	<p>Acute poisoning with alcohols (ethyl, methyl, ethylene glycol). Pathogenesis of mono- and polyvalent alcohol poisoning. Clinical features and course peculiarities. The high risk determining factors of fatal outcome in this type of intoxication. General and specific clinical syndromes and</p>	2ч.	

	symptoms. Diagnostic criteria. Differential diagnosis. Principles and methods of treatment. Therapeutic principles and methods.		
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All : 15 h

LECTURES - THESES

LECTURE № 1 – 2 hours

INTRODUCTION IN OCCUPATIONAL PATHOLOGY

Definition according to Ordinance on the Procedure for Notification, Registration, Confirmation, Appealing and Reporting of Occupational Diseases

1. Legislation covering administration of occupational diseases in the Republic of Bulgaria.
2. Definition according to Ordinance on the procedure for notification, registration, confirmation, appealing and reporting of occupational diseases (№ 168 from 11.07.2008 y.)
3. Classification of occupational diseases
4. List of occupational diseases
5. Basic principles of diagnostics, treatment, expertise
6. Paraoccupational diseases.
7. Prophylaxis of occupational diseases and disorders.

LECTURE № 2 – 2 hours

Occupational disabilities from metals-1h

Basic concepts in general toxicology:

- Poison,

- poisoning
- toxicity,
- dose,
- critical effect,
- material and functional cumulation,
- acute and chronic intoxication,
- habit,
- remote effects,
- an allergic effect,
- idiosyncrasy.

Toxic aggression:

- local toxic effects
- general toxic processes.

Disabling mechanisms and phenomena.

Natural (physiological) detoxification:

- toxicokinetics
- spontaneous mechanical detoxification
- metabolic detoxification - metabolism, excretion.

Occupational intoxications with lead /chronic saturnism/, mercury /chronic mercurialism/, manganese, cadmium, chromium, nickel, arsenic:

- absorption, metabolism, excretion,
 - Etiopathogenesis,
 - Features in the clinical picture and the course of chronic occupational intoxications
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- Diagnosis
 - Treatment
 - Medical expertise and prophylaxis.

OCCUPATIONAL INTOXICATIONS WITH PLASTICS-1h

- definition, classification
- pathogenesis
- The most common intoxications in the clinical practice with:
ethylene
styrene
vinyl cyanide
methyl methacrylate
vinyl chloride – the toxic effect of acute and prolonged exposure

isocyanates

- vinyl chloride disease - nature, pathogenesis, features of the clinical picture, diagnosis and treatment
- general principles of diagnosis and treatment of occupational intoxications with monomers of synthetic resins and plastics
 - medical expertise and prevention

LECTURE № 3 – 2 hours

OCCUPATIONAL CHRONIC INTOXICATIONS WITH ORGANIC SOLVENTS, GASEOUS CHEMICAL COMPOUNDS, PESTICIDES

1. Occupational poisoning with organic solvents –petrol, benzene, amino and nitro derivatives of benzene:

- 1.1. Etiopathogenesis,
- 1.2. Clinical manifestations,
- 1.3. Diagnostics, exposure tests,
- 1.4. Treatment,
- 1.5. Medical expertise and prophylaxis.

2. Occupational damages from acids and bases:

- 2.1. Etiopathogenesis,
- 2.2. Clinical manifestations,
- 2.3. Diagnostics, differential diagnosis
- 1.4. Treatment,
- 1.5. Medical expertise and prophylaxis.

3. Occupational injuries from irritating vapors and gases:

- 3.1. Etiopathogenesis,
- 3.2. Clinical manifestations,
- 3.3. Diagnosis,
- 3.4. Treatment,
- 3.5. Medical expertise and prophylaxis.

4. Pesticide intoxications - classification, pathogenesis, clinic, treatment, prophylaxis.

- 4.1. Classification,
- 4.2. Pathogenesis,
- 4.3. Clinical manifestations,
- 4.4. Diagnostics
- 4.5. Treatment and medical expertise.

LECTURE № 4 - 2 hours

OCCUPATIONAL DISEASES OF THE NERVOUS AND MUSCOLOSKETAL SYSTEM

1. Occupational diseases of the peripheral nervous system: radiculitis, mononeuropathies, polyneuropathies - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
2. Occupational diseases of the central nervous system: cerebraesthesia, encephalopathy - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
3. Occupational diseases of the musculoskeletal system: tendinosis, epicondylitis, tendovaginitis, periarthritides, arthrosis, osteoporosis - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
4. Prophylaxis of occupational diseases of the nervous and musculo-skeletal system.

LECTURE № 5 - 2 hours

Vibration disease:

1. Definition
2. Classification,
3. Etiology
4. Pathogenesis
5. Clinical features and particularities in Vibration Disease course of general and local vibration impact
6. Diagnostic criteria
7. Differential diagnosis:
 - between the two forms of vibration disease
 - between vibration disease and other diseases - clinical features and course
8. Principles of treatment
9. Medical expertise and prophylaxis.

LECTURE № 6 - 2 hours

PNEUMOCONIOSES. OCCUPATIONAL NEOPLASMS

1. Classification of pneumoconiosis.
2. Silicosis - etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, medical expertise, prophylaxis.
3. Silicatosis - asbestosis, talcosis, kaolinosis: etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, medical expertise, prophylaxis.
4. Coal pneumoconiosis - etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, medical expertise, prophylaxis.
5. Occupational neoplasms
 - Etiology and pathogenesis,

- Clinic,
- Diagnostics,
- Treatment,
- Medical expertise and prevention.

LECTURE № 7 - 2 hours

OCCUPATIONAL ALLERGIC DISEASES. OCCUPATIONAL SKIN DISEASES

1. Classification of occupational allergic diseases.
2. Occupational allergic diseases of the lungs.
 - 2.1. Occupational bronchial asthma - etiopathogenesis, criteria for diagnosis, differential diagnosis, treatment, medical expertise.
 - 2.2. Bisinosis - Etiology, Pathogenesis, Diagnosis, Differential Diagnosis, Treatment, Medical Expertise.
 - 2.3. Hypersensitivity pneumonitis - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
3. Occupational allergic diseases of the upper respiratory tract - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
4. Occupational allergic skin diseases: dermatitis, eczema - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
5. Occupational allergic diseases of the visual analyzer - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.
6. Prophylaxis of occupational allergic disease.
7. Occupational skin diseases.

LECTURE № 8 – 1 hour

OCCUPATIONAL DISEASES OF HEARING. VESTIBULAR AND VISION ANALYZER AND UPPER RESPIRATORY PATHWAYS. OCCUPATIONAL DISEASES BY BIOLOGICAL FACTORS.

1. Occupational hearing impairment:
 - Etiopathogenesis,
 - Clinical manifestations,
 - Diagnosis,
 - Treatment,
 - Medical expertise,
 - Prophylaxis.
2. Occupational Vestibulopathies:
 - Etiology,
 - Clinical characteristics,
 - Diagnosis,
 - Treatment and prophylaxis.

3. Occupational eye diseases.

4. Occupational diseases of the upper respiratory tract:

- Etiology,
- Clinical manifestations,
- Treatment

5. Occupational diseases by infectious biological agents - criteria for occupational diagnosis.

PRACTICAL EXERCISES – THESES

OCCUPATIONAL DISEASES

EXERCISE № 1 - 2 hours

FOUNDATIONS OF OCCUPATIONAL PATHOLOGY - INITIAL EXERCISE

1. Definition of occupational disease and occupational accident.
2. Classifications.
3. Taking occupational history and analyzing the data.
4. To acquaint the students with the main normative documents in the field of occupational medicine:
 - An administrative procedure for the regulation of an occupational disease;
 - occupational accident, differences between occupational disease and occupational accidents;
 - Specific legal consequences for the confirmation of an occupational disease;
 - Ordinance on the Procedure for Notification, Registration, Confirmation, Appeal and Reporting of Occupational Diseases;
 - List of occupational diseases.
5. Criteria for diagnosis and assessment of occupational diseases.
6. Basic principles of treatment, expertise and medical prophylaxis.

EXERCISE № 2 - 2 hours

OCCUPATIONAL INTOXICATIONS

1. To acquaint students with the most common occupational intoxications, etiology, pathogenesis, clinical picture, organotropism, specificity of toxic effects, principles and criteria in diagnostics and labor-expert assessment of patients with occupational intoxications, treatment:
 - lead poisoning;
 - mercury poisoning and organic and inorganic mercury compounds;
 - cadmium poisoning;
 - manganese poisoning;
 - poisoning with arsenic, copper, zinc, nickel and chromium (toxic effects, carcinogenic risk);
 - poisoning with organic solvents.
2. Laboratory constellations in chronic occupational poisoning.

3. Presentation and discussion of clinical cases.
4. Individual work with patients

EXERCISE № 3 - 2 hours

OCCUPATIONAL HAZARDS IN PLASTIC INDUSTRY

1. Definition, classification.
2. The most common intoxications with plastics - specificity of toxic effects, clinical picture, diagnostics, treatment, labor-expert assessment, carcinogenic risk:
 - Ethylene
 - Styrene
 - Methyl methacrylate
 - Acrylonitrile
 - Isocyanates.
3. Vinyl chloride:
 - Peculiarities of acute and chronic toxic effects, carcinogenic risk;
 - Vinyl chloride disease - clinical picture, diagnostic criteria, treatment, labor-expert assessment.
4. Individual work with patients, discussions.

EXERCISE № 4 - 2 hours

PNEUMOCONIOSES

1. Definition, classifications.
2. Pathogenesis.
3. Silicosis - definition, etiology, pathogenesis, clinical-radiographic-morphological and ILO classification, clinical picture, special forms of silicosis, diagnostic criteria, differential diagnosis, treatment, labor-expert assessment.
Presentation and discussion of clinical cases. Demonstration of pulmonary imaging in silicosis patients.
4. Silicatoses - definition, classification.
 - Asbestos induced occupational injuries - classification.
Clinical picture, diagnosis, differential diagnosis, treatment, and labor-expert assessment of pulmonary asbestosis.
Asbestos as a carcinogen.
 - Talcosis
5. Coal pneumoconiosis - definition, etiology, pathogenesis, forms, clinical picture, diagnosis, treatment, labor-expert assessment.
6. Individual work with patients, discussions.

EXERCISE № 5 - 2 hours

OCCUPATIONAL ALLERGIC DISEASES. OCCUPATIONAL BRONCHITIS

1. Classification of occupational allergic diseases.
2. Occupational bronchial asthma:
 - Definition, etiology, pathogenesis, classification;
 - Clinical picture;
 - Basic criteria for diagnosis and evaluation of occupational etiology of asthma;
 - Treatment, labor-expert assessment;
 - Presentation and discussion of clinical cases with occupational bronchial asthma.

3. Rhinitis - definition, etiology, pathogenesis, classification and forms - ARIA, clinical picture, criteria for diagnosis and evaluation occupational etiology of rhinitis, principles of treatment, pharmacotherapy, specific immunotherapy, labor-expert assessment. Presentation and discussion of clinical cases.

4. Conjunctivites.

5. Contact allergic dermatitis - definition, etiology, pathogenesis, clinical picture, diagnostic criteria, treatment and labor-expert assessment.

6. Occupational chronic bronchitis - definition, etiology, pathogenesis, classification.

7. Particularities in the clinical picture and the course of individual forms of occupational bronchitis.

8. Basic criteria for assessing the occupational nature of chronic bronchitis.

9. Differential diagnosis, treatment, occupational-expert evaluation of occupational chronic bronchitis.

10. Presentation and discussion of clinical cases.

EXERCISE № 6 - 2 hours

OCCUPATIONAL DISEASES OF THE NERVOUS AND MUSCULOSKELETAL SYSTEM.

1. Occupational diseases of the peripheral nervous system: radiculitis, mononeuropathies, polyneuropathies - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.

Upper limb autonomic polyneuropathy:

- definition;

- risk groups and factors;

- pathogenesis;

- clinical classification;

- features in the clinical picture and the course of the diseases;

- diagnostic criteria;

- treatment, labor-expert assessment;

- presentation and discussion of clinical cases.

2. Occupational diseases of the central nervous system: cerebraesthesia, encephalopathy - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.

3. Occupational diseases of the musculoskeletal system: tendinopathy, epicondylitis, periarthritis, arthrosis, osteoporosis - etiology, pathogenesis, diagnosis, differential diagnosis, treatment, medical expertise.

4. Prophylaxis of occupational diseases of the nervous and musculoskeletal system.

EXERCISE № 7 - 3 hours

VIBRATION DISEASE. PRINCIPLES AND METHODS IN THE DIAGNOSIS OF OCCUPATIONAL DISEASES DUE TO VIBRATIONS AND BIOMECHANICAL RISK FACTORS

1. Definition, risk groups and factors, clinical classification, pathogenesis.

2. Clinical picture of vibration disease by hand-arm vibration impact.

3. Clinical picture of vibration disease caused by whole-body vibration.

4. Criteria for diagnosis, differential diagnosis between the two forms of vibration disease and other diseases.
 5. Treatment, labor-expert assessment.
 6. Presentation and discussion of patients with vibration disease.
 7. Most commonly used methods for the diagnosis of occupational diseases from vibration and overstrain of the musculoskeletal and the peripheral nervous system.
 8. Imaging diagnostics - X-ray and CT, readings, informative, diagnostic value.
 9. Doppler sonography, angiography of upper limbs.
 10. To acquaint the students with the following methods:
 - cold provocation test of the limbs;
 - palesthesiometry;
 - reodermometry;
 - alternating dynamometry;
 - capillaroscopy.
- Indications, technique of performance, interpretation of results in specific patients.

CLINICAL TOXICOLOGY

EXERCISE № 1 - 3 hours

Organization and structure of toxicological care in Bulgaria. Etiology, epidemiology, classification of poisonings. Basic terms and concepts in clinical toxicology.

TOXOALLERGIC SHOCK(anaphylaxis)

1. Outpatient toxicological care in Bulgaria.
2. . Organization and structure of hospital toxicological care. Composition, structure and functions of the Regional Toxicology Center.
3. Basic concepts in clinical toxicology
4. Emergency measures in acute exogenous poisoning
5. TOXOALLERGIC SHOCK(anaphylaxis)
 - -definition
 - -etiology
 - -pathogenesis
 - -clinical manifestations
 - Features in the clinical course of various forms of anaphylactic shock
 - foudroyant form of anaphylactic shock – characteristics
 - diagnosis criteria
 - differential diagnosis
 - principles and methods of treatment

EXERCISE № 2 - 2 hours

PATHOGENESIS, DIAGNOSTICS, TREATMENT, BEHAVIOR IN ACUTE INTOXICATION . UNIFIED THERAPEUTIC SCHEME.

2.1 Poisoning pathogenesis - toxicokinetics and toxicodynamics

2.2. Stages of toxicokinetics:

- initial
- hematogenous
- organocellular
- elimination stage

2.3. Clinical significance of each of the stages in assessing the severity of intoxication and choice of depuration-detoxification method

2.4. Principles of diagnosis of acute exogenous intoxications-role of toxicological history, clinical features and paraclinical methods.

2.5. Toxicochemical analysis essence and significance in the diagnosis of poisoning.

2.6 Practical life-saving and detox procedures - demonstration of techniques, acquaintance with the equipment and acute poisoning patients' medical documentation

2.7 Entry route depuration methods. Gastric lavage - essence of the procedure, indications and contraindications, procedure technics - demonstration in patients

2.8. Blood depuration methods: forced diuresis, extra renal methods of hemodepuration, exchange transfusion

2.9 Detoxification with antidote - antidote definition, classification of antidote agents by mechanism of action, place of antidotes in the unified therapeutic scheme for acute poisoning treatment, antidotes most commonly used in toxicological practice

2.10. Diagnostic and therapeutic algorithms for different types of intoxications

EXERCISE № 3 - 2 hours

ACUTE POISONING WITH NEUROTROPIC DRUGS (BENZODIAZEPINES, BARBITURATES ,NEUROLEPTICS, ANTIDEPRESSANTS)

3.1. Indications for their clinical practice usage , general and specific clinical manifestations for each of these drug groups, acute poisoning diagnostic criteria.

3.2. Specific clinical features of benzodiazepine poisoning, clinical manifestations of cerebellar syndrome.

3.3 Barbiturate intoxications specific features, barbiturate coma - classification according to the brain function depression severity, clinical syndromes in acute barbiturate poisoning

3.4. Acute poisoning with neuroleptics - classification, pathogenesis, clinical symptoms

3.5. Pathogenesis, clinic, diagnosis and treatment of acute antidepressant poisoning

3.6. Hospital basic treatment measures in neurotropic drugs poisoning.

EXERCISE № 4 - 2 hours

Acute poisoning with narcotic analgesics-classification, pathogenesis, clinical syndromes, diagnostic and therapy criteria.

Acute poisoning with antipyretics (aspirin, paracetamol), antihypertensive drugs and cardiac glycosides

4.1. Opioid analgesics classification

4.2 Intoxication pathogenesis

4.3 Clinical course-main clinical syndromes and symptoms

4.4 Diagnostic criteria-medical history, clinical and laboratory

4.5 Complications of acute opioid intoxication-Possibilities of high risk of fatal outcome.

4.6 Acute poisoning therapeutic principles and methods .Antidote therapy.

4.7 Mechanisms of heroin addiction genesis. Clinical features and therapy heroin discontinuation syndrome.

4.8 Acute poisoning of aspirin and paracetamol-pathogenesis, clinical features, diagnostic criteria, therapy.

4.9 Acute poisoning of antihypertensive drugs-classification, pathogenesis, clinical course, diagnosis, treatment methods and agents

4.10 Cardiac glycosides intoxication-acute and chronic.

Cardiac glycosides classification. Indication for cardiac glycosides usage in clinical practice. Poisoning pathogenesis. Specific cardiotoxicity of cardiac glycosides. Clinical syndromes in acute poisoning. Possibilities of high risk of fatal outcome .Peculiarities in chronic cardiac glycosides poisoning. Diagnostic criteria. Differential diagnosis. Therapeutic principle and methods in acute and chronic poisoning.

EXERCISE № 5 - 2 hours

ACUTE POISONING WITH PESTICIDES , ACIDS AND BASES

5.1. ACUTE POISONING WITH PESTICIDES-1hour

- poisoning with pesticides (organophosphorus). Classification, chemical structure-peculiarities, pathogenesis, clinical course. Main clinical syndromes. Diagnostic criteria. Possibilities of high risk of fatal outcome. Differential diagnosis. Therapeutic principle and methods. Antidote therapy.
- poisoning with pesticides (organochlorine). Classification, chemical structure-peculiarities, pathogenesis, clinical course. Main clinical syndromes. Diagnostic criteria. Differential diagnosis. Therapeutic principle and methods.
- poisoning with pesticides (carbamates and dithiocarbamates). Clinical course and pathogenesis peculiarities. Main clinical symptoms. Diagnostic criteria. Differential diagnosis. Therapeutic principle and methods.
- poisoning with pesticides (pyrethroids). Clinical course and pathogenesis peculiarities. Diagnostic criteria. Differential diagnosis. Therapeutic principle and methods.

5.2 ACUTE POISONING WITH ACIDS AND BASES-1h

- Acute poisoning with inorganic acids. Clinical course peculiarities. Diagnostic criteria. Early and late complications. Therapeutic principles and methods.
- Acute poisoning with inorganic bases. Clinical course peculiarities. Diagnostic criteria. Early and late complications. Therapeutic principles and methods

EXERCISE № 6 - 2 hours

POISONING WITH BIOLOGICAL POISONS-SNAKE POISON, ARTHROPODS, MUSHROOMS

- 6.1 Current epidemiology
- 6.2 Phalloid mushroom intoxication – etiology, pathogenesis, Clinical course peculiarities. Diagnostic criteria. Differential diagnosis.
- 6.3 Phalloid mushroom intoxication- therapeutic principles and methods
- 6.4 Clinical cases discussion. Laboratory results interpretation- phalloid mushroom intoxication. Possibilities of high risk of fatal outcome.
- 6.5 Poisoning with snake venom– pathogenesis, clinical course peculiarities. Diagnostic criteria.
- 6.6 Therapeutic principle and methods.

EXERCISE № 7 - 2 hours

Acute poisoning with alcohols (ethyl, methyl, ethylene glycol).

- 7.1. Toxic-chemical characteristics of alcohols
- 7.2. Features in the pathogenesis and clinical picture of acute intoxications with ethyl alcohol.
- 7.3. Features in the pathogenesis and clinical picture of acute intoxications with methyl alcohol
- 7.4. Features in the pathogenesis and clinical picture of acute intoxications with ethylene glycol
- 7.5. Main clinical syndromes in ethanol, methanol and ethylene glycol poisoning (mono- and polyvalent alcohol poisoning)
- 7.6. The high risk determining factors of fatal outcome in this type of intoxication
- 7.7. General and specific clinical syndromes and symptoms.
- 7.8. Diagnostic criteria. Differential diagnosis
- 7.9. Principles and methods of treatment. Antidotes.

ESSAYS THEMES ON OCCUPATIONAL DISEASES

1. Occupational disorders from lead intoxication.
2. Occupational intoxication with mercury.
3. Occupational manganese and cadmium intoxications.
4. Occupational Intoxications with Organic Solvents.
5. Occupational acid and base intoxications.
6. Occupational damage due to occupational physical risk factors in the working environment and the labor process.
7. Occupational allergic diseases.
8. Occupational diseases from static and dynamic physical load and microtrauma.
9. Pneumoconioses.
10. Occupational neoplasms.
11. Occupational diseases of the skin.
12. Occupational diseases of analysers.
13. Risk assessment and prognosis of occupationally induced diseases, risk profile.

ESSAYS THEMES ON CLINICAL TOXICOLOGY

1. Epidemiology of intoxications.
2. Place of antidote therapy in the treatment of poisoning
3. Features of drug intoxication nowadays-"Designer drugs", amphetamines, methamphetamines
4. Features and characteristics of different types of addictions - alcohol, heroin, drugs, etc.
5. Possibilities of high risk of fatal outcome in acute alcohol intoxication
6. Features of intoxications with poisonous plants and animals
7. The most poisonous animals and plants around the world.
8. What makes mushrooms a risk factor for human life?

OCCUPATIONAL DISEASES AND TOXICOLOGY SYLLABUS

Specialty "Medicine"

III year

1. Occupational diseases – definition, classification, list of occupational diseases. Main principles of diagnostics, treatment, expertise and medical prophylaxis.
2. Occupational disease and occupational accident. Expertise of occupational diseases – principles, registration procedures, legal outcomes.
3. Pneumoconiosis – classification, etiology, pathogenesis. Silicosis – clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.
4. Silicosis: asbestosis, talcosis, kaolinosis – etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.
5. Coal worker's pneumoconiosis – etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.
6. Occupational chronic bronchitis – classification, etiology, pathogenesis, clinical manifestations, diagnosis, diagnostic criteria for occupational etiology, differential diagnosis, treatment, medical expertise.
7. Occupational respiratory allergic diseases. Occupational bronchial asthma. Bisinosis. Etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, diagnostic criteria for occupational etiology, treatment, medical expertise.
8. Hypersensitivity pneumonitis - etiology, pathogenesis, clinical manifestation, diagnosis, treatment, medical expertise.
9. Occupational intoxications with irritant gasses (fluorine, hydrogen

fluoride, chlorine, hydrogen chloride or sulfide, ammonia, sulfur dioxide). Etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

10. Occupational intoxications with nitrogen oxides – etiology, pathogenesis, clinical manifestation, diagnosis, treatment, medical expertise.

11. Occupational intoxication with carbon monoxide - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

12. Occupational intoxications with non-organic lead compound (chronic saturnism) - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

13. Occupational intoxications with organic lead compounds (tetraethyl lead) - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

14. Occupational intoxications with non-organic mercury compounds (mercurialism) - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

15. Occupational intoxications with non-organic manganese compounds - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

16. Occupational intoxications with cadmium compounds - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

17. Occupational intoxications with arsenic compounds - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

18. Occupational intoxications with nickel, chromium and compounds - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

19. Occupational intoxications with organic solvents: petrol - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

20. Occupational intoxications with benzene and its compounds (xylene, styrene, toluene) - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

21. Occupational intoxications with nitro- and amino-benzenes - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

22. Occupational intoxications with carbon disulfide - etiology,

pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

23. Occupational intoxications with monomers of synthetic resins and plastics - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

24. Acute and chronic intoxications with pesticides – classification, pathogenesis, specific toxicity, clinical manifestations of the most common intoxications (organophosphate, chlorinated pesticides, carbamates, dithiocarbamates), occupational risk, diagnostic and therapeutic algorithm.

25. Radial epicondylitis - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

26. Tendomyositis of the lower arm - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

27. De Quervain's disease - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

28. Stenosing flexor tenosynovitis (trigger finger) - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

29. Humeroscapular periarthrosis - etiology, pathogenesis, clinical manifestations, diagnosis, treatment, medical expertise.

30. Occupational bone and joint diseases - etiology, pathogenesis, clinical manifestations, occupational diagnostic criteria, treatment, medical expertise.

31. Occupational radiculopathy - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.

32. Occupational distal autonomic neuropathy of upper limbs - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.

33. Mononeuropathy in entrapment compression syndromes of the carpal, cubital and Guyon's canal - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.

34. Vibration disease due to hand-arm vibration- etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.

35. Vibration disease due to whole-body vibration - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.

36. Occupational hearing impairments - etiology, pathogenesis, clinical

- manifestations, diagnosis, treatment, medical expertise and prophylaxis.
Health Effects of Exposure to Ultrasound and Infrasound.
37. Occupational skin diseases - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, medical expertise.
 38. Occupational neoplasms - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, criteria for occupational diagnosis, treatment, medical expertise.
 39. Occupational diseases due to biological factors - etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, criteria for occupational diagnosis, treatment, medical expertise.
 40. Pathogenesis of intoxication – toxicokinetic mechanisms.
 41. Treatment methods of acute intoxications – united therapeutic scheme, principles, means and methods of cleansing of the entrance of toxins, methods for blood depuration (haemodepuration).
 42. Antidote detoxification.
 43. Acute toxic respiratory injuries.
 44. Acute barbiturate intoxications.
 45. Acute intoxications with benzodiazepines.
 46. Acute intoxications with antidepressants
 47. Acute intoxications with narcotics.
 48. Acute intoxications with atropine.
 49. Acute alcohol intoxications – ethyl, methyl
 50. Acute intoxications with ethylene glycol
 51. Acute intoxications with tetrachlormethane
 52. Acute intoxications with chinine
 53. Acute intoxications with antipyretics – aspirin, paracetamol
 54. Acute intoxications with cyanide compounds
 55. Acute intoxications with digitalis preparations.
 56. Snake poison intoxications.
 57. Phaloid mushroom intoxications
 58. Muscarinic and myco-atropine mushroom intoxication.
 59. Acute alkaline and acidic intoxications
 60. Anaphylactic shock – definition, etiology, pathogenesis, types, clinical manifestations, diagnostic and therapeutic algorithms.

QUESTIONS FOR INDIVIDUAL PREPARATION ON OCCUPATIONAL DISEASES

Theme 1

INTRODUCTION IN OCCUPATIONAL PATHOLOGY

1. What is the definition of an occupational disease according to the Ordinance on the Procedure for Notification, Registration, Confirmation, Appeal and Reporting of Occupational Diseases
2. Why is it necessary to have a specific legal framework for occupational diseases require?
3. On what principle is the List of Occupational Diseases established and what is its content?
4. What types of diseases exist according to the classification of occupational diseases?
5. What does a specific occupational disease mean?
6. What does a conditional occupational disease mean?
7. What does a paraoccupational or work-related illness mean?
8. What are the main principles of diagnosis, treatment, expertise in occupational diseases?
9. What are the main principles in the prevention of occupational diseases and dental disorders.
10. What are the main preventive measures for occupational diseases?

Theme 2

VIBRATION DISEASE

1. What is the definition of vibration disease?
2. What are the risky professions with exposure to local vibration effects?
3. What are the main pathogenetic mechanisms of local vibration damage?
4. What are the clinical manifestations of vibrational disease due to local vibrations?
5. What are the common methods for diagnosing vibrational disease by local vibration?
6. What are the main professions exposed to general vibrations in working conditions?
7. What are the main syndromes that build up the clinical picture of vibrational disease from common vibrations?
8. What diagnostic methods contribute to the proving of vibrational disease by total vibrational impact?
9. What are the criteria for the diagnosis of vibrational disease by local and / or general vibrations?
10. What Is The Treatment Of Damage By Vibration?

Theme № 3

PNEUMOCINIOSES

1. What is the definition of pneumoconiosis?
2. What are the types of pneumoconiosis?
2. What is the etiology of silicosis?
4. What are the main pathomorphologic changes, clinical manifestations, and methods for demonstrating silicosis?
5. What is the definition of silicatosiis?
6. What are the most common types of silicatosiis?
7. What are the main diagnostic principles?
8. What is characteristic of coal pneumoconiosis?
9. What are the main elements of medical expertise in pneumoconiosis?
10. How is a diagnosis of silicosis, asbestosis?
11. What are the complications of pneumoconiosis?
12. What is the treatment of pneumoconiosis?
13. What is the prevention of pneumoconiosis?

Theme № 4

OCCUPATIONAL ALLERGIC DISEASES

1. Which allergic diseases can be occupationally determined?
2. What are the main clinical manifestations of bronchial asthma and what are the criteria for occupational diagnosis?
3. What is the etiology and clinical characteristic of the binosis?
4. What is the hypersensitivity pneumonitis - etiology, clinical picture, diagnosis, treatment?
5. What are the main allergic diseases of the upper respiratory tract?
6. Give examples of occupational allergic diseases to the eye analyzer.
7. Which skin diseases can be occupationally induced?
8. What are the criteria for assessing the occupational origin of occupational allergic diseases?
9. What is the treatment of occupational allergic diseases?
10. What are the measures for the prevention of occupational allergic diseases?

Theme № 5

OCCUPATIONAL DISEASES OF THE NERVOUS AND MUSCULOSKELETAL SYSTEMS

1. What are the major occupational diseases of the peripheral nervous system?
2. What risk factors in the working environment cause occupational diseases of the peripheral nervous system?
3. What are the basic principles for the occupational diagnosis of the musculoskeletal and peripheral nervous system due to overstrain and microtrauma?
4. What are the major etiological factors in the work environment that cause occupational disorders of the central nervous system?

5. What are the most common occupational diseases of the musculoskeletal system?
6. What are the main occupational risk factors that cause injuries to the musculoskeletal system?
7. What methods are used to diagnose occupational nervous and musculoskeletal disorders?
8. What are the main principles for the occupational diagnosis of musculoskeletal disorders?
9. What is the treatment of occupational disorders of the nervous and musculoskeletal system?
10. What are the main preventive measures to prevent the occurrence of diseases of the nervous and musculoskeletal system of an occupational nature?
11. What is secondary and tertiary prophylaxis in this pathology?

Theme № 6

OCCUPATIONAL HEALTH EFFECTS DUE TO HEAVY METALS, ORGANIC SOLVENTS, ACIDS, BASES, PLASTICS, IRRITATING GASES

1. What are the main syndromes of professional lead intoxication?
2. What does biomarker of exposure mean?
3. What does biomarker mean?
4. What are the laboratory tests that contribute to the diagnosis of lead intoxication?
5. What are the main clinical syndromes in occupational mercury intoxication?
6. How is mercury intoxication diagnosed?
7. What are the main clinical manifestations of manganese and cadmium poisoning?
8. What are the characteristics of occupational poisoning with organic solvents - petrol, benzene, amino- and nitro-derivatives of benzene?
9. What are the occupational disabilities of acids and bases?
10. What causes professional poisoning with monomers of synthetic resins and plastics?
11. What are the basic principles for diagnosing occupational intoxications?
12. What are occupational injuries from irritating vapors and gases ?
13. What are the typical clinical manifestations of carbon monoxide poisoning?

Theme № 7

OCCUPATIONAL NEOPLASMS

1. What are the main occupational risk factors that have a proven carcinogenic effect?
2. What causes occupational carcinogens?
3. How is the occupational nature of neoplastic disease proven?
4. What is the prevention of occupational neoplasms?
5. What is typical of the expertise of occupational neoplasms?

Theme № 8

OCCUPATIONAL DISEASES OF BIOLOGICAL FACTORS

1. What are the diseases of biological risk factors in the working environment?
2. What are the risky professions in which these diseases can be observed?

3. What are the main criteria for assessing the occupational nature of an infectious or parasitic disease?
4. What is the treatment of occupational diseases by biological factors?

Theme № 9

OCCUPATIONAL SKIN DISEASES

1. What are the most common occupational skin diseases?
2. What are the criteria for assessing the occupational genesis of skin diseases?
3. What is the treatment and prevention of occupational skin diseases?

QUESTIONS ON CLINICAL TOXICOLOGY FOR INDIVIDUAL WORK

1. Features of the comatose syndrome in intoxications with various poisons
2. Antidote detoxification- definition of antidote, classification according to the mechanism of action, antidotes often used in practice, indications, doses, method of administration
3. Organophosphorus compounds as groups with high potential for bioterrorism
4. Features of intoxications with cyanide compounds
5. Acute intoxications with carbon tetrachloride
6. Acute quinine poisoning
7. Long-term toxic effects of pesticides. Mutagenic, teratogenic, embryotoxic, sensitizing and carcinogenic effects.
8. Main clinical syndromes in toxicology

LITERATURE SOURCES FOR STUDENT PREPARATION

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2. Iskrov G.,Dermendzhiev S.,Miteva T.,Stefanov R. Healt economic data in reimbursement of new medical technologies : importance of the socio-economic burden as a decision-making criterion. Frontiers in Pharmacology.2016 Aug (7) : 1-5 **(IF 4,418)**
- 3.Raditsa Sokolova,Svetlan Dermendzhiev,Rumyana Yankova Angioedema associated with Helicobacter pylori and type 2 diabetes Our Dermatology Online Suppl.1.2016 (12 August 2016) : 369-371 **(IF 0,7319)**
- 4.Stoyneva Z. Postocclusive reactive hyperemia in hand-arm vibration syndrome. Int J Occup Med Environ Health. 2016;29(4):659-66. doi:10.13075/ijomeh.1896.00765. **(IF 1.365)**
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