**Sumy State University**

**Academic and ResearchMedical Institute**

**Department of Paediatrics**

“Approved”

at sub-faculty meeting

“\_\_”\_\_\_\_\_20\_\_, protocol №\_\_

Head of  Department

prof. \_\_\_\_\_\_\_\_O. I. Smiyan

* **Study Guide for Practical Work of Students**

for foreign students 6 course medical institute with

English form of education

Topic: **“Differential diagnostics of the exanthema followed diseases.”**

**(scarlet fever, measles, rubella, chicken pox, pseudotuberculosis, meninhokoktsemiya) and noninfectious allergic rash**

Course   VI

English-speaking  Students’ Medical Institute

Duration of the lesson: 4 hours.

**Relevance of the topic:**

Practice shows growth in recent years, difficulties in diagnosis of diseases which are accompanied by rash is associated with changes in their clinic and epidemiology. To the clinical changes should include increased light and missing forms of disease, reduce complications typical for these diseases.

Epidemiological changes struck in violation of the previously existing relationship with the incidence of childhood infections, rash. Yes, thanks to the mass refusal of parents on active immunization increased the incidence of measles. Rubella. Also, increased incidence of scarlet fever, pseudotuberculosis, enteroviral infection. Variety of forms of these infections significantly complicates the recognition and differentiation from other diseases.

The increase in current conditions the frequency of skin lesions of allergic nature and causes additional difficulties in the recognition of rash.

**LESSON OBJECTIVES:**

 Based on the knowledge and skills that a student received on V course of diagnosis, treatment and prevention of diseases which are accompanied by rash, teach differential diagnosis, rational treatment and prevention of infectious diseases that are accompanied by rash.

**The student must know:**

1. Differential diagnosis of scarlet fever and pseudotuberculosis.

2. Differential diagnosis of scarlet fever and rubella.

3. Differential diagnosis of measles and rubella.

4. Differential diagnosis of measles and meninhokoktsemiyi.

5. Differential diagnosis of rubella and allergic rashes.

6. Differential diagnosis of scarlet fever and allergic rashes.

7. Differential diagnosis meninhokoktsemiyi and allergic rashes.

8. Monitoring patients with scarlet fever, rubella, measles, chicken pox on an outpatient basis.

9. Indications for hospitalization of patients with scarlet fever, measles, rubella, chicken pox.

10. Complications with scarlet fever, measles, rubella, chicken pox.

11. Anti-epidemic measures in the foci, scarlet fever, measles, rubella. chicken pox, meningococcal disease.

**The student should be able to:**

1. Follow basic rules of the bed next to an infectious patient.

2. Collect history of the disease and to determine the epidemiological situation (set availability contact with infectious patients).

3. Examine patients and to identify his main symptoms of infectious diseases (especially the appearance of rash and its disappearance).

4. Show this epidemiological anamnesis, anamnesis of the disease and review of the patient in the history of the disease and to explain the preliminary diagnosis.

5. Assign more tests to clarify the diagnosis and a differential diagnosis.

6. Evaluate research data.

7. Diagnosis and diagnosis to justify in the light of clinical, epidemiological and laboratory data.

8. Diagnose problems.

9. Conduct a differential diagnosis of infectious diseases that are accompanied by rash (measles, rubella, scarlet fever, chicken pox, pseudotuberculosis, meninhokoktsemiya) and noninfectious allergic rash.

10. Assign patient treatment, taking into account the severity of illness, the child's age, presence of complications, premorbid background of the child.

11. Identify the indications for hospitalization of a child suffering from an infectious disease that is accompanied by a rash (measles, rubella, scarlet fever, chicken pox, pseudotuberculosis, meninhokoktsemiya).

12. Organize a hospital infectious patients with infectious disease, which is accompanied by rash at home.

13. To plan preventive measures in foci of infection air-drop.

**EDUCATIONAL OBJECTIVES:**

ethics issues when working with patients on air-drip infection.

**Interdisciplinary Integration:**

**Microbiology:**

**Know:**

1. Characterization of causative agents of measles, rubella, scarlet fever, chicken pox, pseudotuberculosis, meningococcal infection. Basic properties of the causative agent.

2. Laboratory Methods of measles, rubella, scarlet fever, chicken pox, pseudotuberculosis, meningococcal infection.

3. Bacteriological. Virological and serological diagnostic methods.

**Able to:**

1. Conduct induction material for virological, bacteriological and serological studies.

**Patanatomy**:

**Know:**

1. Anatomopathological changes in organs with measles, rubella, scarlet fever, chicken pox, pseudotuberculosis, meningococcal infection.

**Epidemiology:**

**Know:**

1. Source of infection and transmission mechanism for measles, rubella, scarlet fever, chicken pox, pseudotuberculosis, meningococcal infection.

2. Epidemiological significance of the patient as a source of infection depending on the period of infection and its clinical course.

**Able to:**

1. Collect epidemiological history, to assess the epidemiological situation.

2. Set-up foci of infection.

**Dermatology:**

**Know:**

1. Morphology rash.

**Childhood infectious diseases**, 5 year:

**Know:**

1. Typical clinical picture of measles, rubella, chicken pox, scarlet fever, pseudotuberculosis, meninhokoktsemiyi.

2. Pathogenesis of measles, rubella, chicken pox, scarlet fever, pseudotuberculosis, meninhokoktsemiyi. Clinical classification. Clinic. Basic principles of therapy. Prevention in children.

**Able to:**

1. Survey of infectious patients.

**LITERATURE ON THE TOPIC OF THE LESSONS:**

1. 4226 Methodical instructions for practical lessons "Children infectious diseases. Measles" [Текст] : for students of specialty 7.110101 of full-time studying / O. I. Smiyan, T. P. Bynda, Iu. A. Mozgova, K. O. Smiian-Horbunova. — Sumy : Sumy State University, 2017. — 59 p.
2. 4567 Methodological instructions for practical lessons "Scarlet fever" on the discipline "Childhood infections" [Текст] : in accordance with the conditions of the Bologna process for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, K. O. Smiian-Horbunova, O. G. Vasilyeva. — Sumy : Sumy State University, 2019. — 54 p.
3. Infant and Young Child Nutrition (0–23 months) : recommendations [Текст] / O. V. Katilov, A. V. Varzar’, O. Yu. Belousova etc. — Vinnytsia : Nova Knyha, 2019. — 64 p.
4. 4390 Methodological instructions for practical lessons "Rubella" on the discipline "Childhood infections" [Текст] : in accordance with the conditions of the Bologna process for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, K. O. Smiian-Horbunova. — Sumy : Sumy State University, 2018. — 53 p.
5. Manual of Children's Infectious Diseases [Текст] = Дитячі інфекційні хвороби : навч. посіб. / O. Ye. Fedortsiv, I. L. Horishna, H. A. Pavlyshyn, I. M. Horishnyi. — Vinnitsia : Nova Knyha, 2020. — 440 p.
6. Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.

Додаткова література:

1. Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.
2. Red Book 2021: Report of the Committee on Infectious Diseases (Red Book Report of the Committee on Infectious Diseases), 32-d Edition / David W. Kimberlin MD FAAP, Dr. Elizabeth Barnett M.D., et al. // American Academy of Pediatrics, 2021. - 1100 p.
3. Infectious diseases and epidemiology: textbook / V. I. Pokrovsky, N. I. Briko, B. K. Danilkin. - 3rd ed., Rev. and add. - M .: GEOTAR-Media, 2016 .-- 1008 p.

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**Study Guide for Practical Work of Students**

for foreign students 6 course medical institute with

English form of education

**Topic: “Differential diagnostic acute respiratory diseases (diphtheria, mumps, whooping-cough, ) in the children and an emergency medical conditions in the children with acute respiratory diseases”**

Course   VI

English-speaking  Students’ Medical Institute

Duration of the lesson: 4 hours

**The theme  urgency**

Diphtheria is an acute infectious disease caused *by Corynebacterium diphtheria* and characterized by the appearance of a fibrinous membrane on the site of pathogen invasion, which can spread on to the tonsils, larynx and pharynx, leading to symptoms of toxemia and toxic lesions of the cardiovascular system, nervous system, adrenal glands and kidneys.

The causative agent in mumps is a filterable virus from the group of myxoviruses (Paramyxovirus parotitidis) that varies in size, averaging 100–200 nm. As seen by electron microscopy, it has a flattened spherical or irregular shape. It contains ribonucleic acid (RNA). The virus is of low stability and is rapidly inactivated by high temperatures, ultra-violet rays, weak formalin solutions, lyzol, and alcohol. It is grown on developing chick embryos. The mumps virus is pathogenic for monkeys, in which it produces a characteristic inflammation of the parotid glands.

The causative agent of whooping-cough is the Bordet-Gengou bacillus *Haemophilus (Bordetella) pertussis*, a small, ovoid, non-motile rod 0.5 to 2.0 μm long, gram-negative, strictly aerobic, and haemoglobinophilic. It grows best on a potato-glycerol blood agar (Bordet-Gengou culture medium). Other nutrients, however, particularly casein-carbon agar medium, are now widely used. When cultured, the bacillus forms small, round, lustrous colonies resembling drops of mercury. Its resistance is very low, and it succumbs rapidly to the effect of high temperature, direct sunlight, desiccation and various disinfectants.

**The aim of the study**: to teach students on the basis of information of anamnesis of illness, epidanamnesis and clinical displays diagnose ARD in the children, to make a differential diagnosis and  antiepidemic  measures in the nidus of infection.

**A student must know:**

1. Etiology and properties of the cause and causing factors of  diphtheria.
2. Epidemiology (source of infection, ways of transmission, age-old receptivity and morbidity).
3. Pathogenesis of disease, pathomorphologic changes in the staggered organs.
4. Classification of clinical forms of diphtheria.
5. Clinic of typical form of diphtheria.
6. Methods of laboratory research.
7. Principles of therapy of diphtheria.
8. Measures of prophylaxis of diphtheria.
9. Etiology of infectious mononucleosis.
10. Epidemiology infectious mononucleosis.
11. Characteristic of Epstein-Barr virus (EBV).
12. Pathogenesis of disease, pathomorphologic changes in the staggered organs and blood cells.
13. Classification of clinical forms of infectious mononucleosis.
14. Clinic of infectious mononucleosis.
15. Clinic of acute form Epstein-Barr viral infection.
16. Clinic of chronic form Epstein-Barr viral infection.
17. Hematologic disorders are typical for infectious mononucleosis.
18. Methods of laboratory research.
19. Principles of therapy of  infectious mononucleosis.
20. Antiviral treatment of Epstein-Barr viral infection.
21. Postface of  infectious mononucleosis.

**22.Other clinical forms of Epstein-Barr viral infection.**

1. Etiological factor of mumps.
2. Classification of mumps.
3. Pathogenesis and clinical manifestations of mumps.
4. Complications of mumps.
5. Treatment of mumps.
6. Principles of prophylaxis of mumps.
7. Etiological factor of pertussis.
8. Classification of pertussis.
9. Pathogenesis and clinical manifestations of pertussis.
10. Treatment of pertussis.
11. Principles of prophylaxis of pertussis.

**A student must be able:**

1. To follow the basic rules of work with a patient sick with ARD.
2. To take anamnesis with the estimation of epidemiology information (taking into account seasonality, origin of febricities, polymorphism of clinical signs of illness).
3. To examine a patient and reveal the basic clinical signs of illness.
4. To represent information of anamnesis and objective inspection in a hospital chart and  formulate the preliminary diagnosis.
5. To write a plan of examination.
6. To write a clinical diagnosis (form of disease, type, severity, course of disease).
7. To  prescribe the treatment taking into account age, severity of illness.
8. To write out a prescription.
9. To organize disease measures in the hearth of infection (to find out the source of infection, fill an urgent report in SES, to set a quarantine, to define the circle of contact persons, conduct them bacteriological inspection).
10. To write epicrisis with the estimation of development of illness, results of inspection, efficiency of treatment, prognosis, by recommendations for a subsequent supervision or treatment depending on the form of  ARD.
11. Perform diagnostic options in patient with ARD.
12. Make differential diagnosis.
13. Interpret data of laboratory studies.

**Educational aims of the study**

-  forming the deontological presentations, skills of conduct  with the patients,

- to develop  deontological presentations,  be able to carry out deontology  approach to the patient,

-  to develop the  presentations of influence of ecological and socio-economic factors on the state of health,

-  to develop sense of responsibility for a time illness and loyalty of professional actions,

* to be able to set psychological contact with a patient and his family.

**References**:

1. Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.
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**Additional:**

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2. World Health Organization. Diphtheria [website]. Geneva: World Health Organization; 2017URL : <http://www.who.int/> immunization/monitoring\_surveillance/burden/diphtheria/en/
3. Red Book 2021: Report of the Committee on Infectious Diseases (Red Book Report of the Committee on Infectious Diseases), 32-d Edition / David W. Kimberlin MD FAAP, Dr. Elizabeth Barnett M.D., et al. // American Academy of Pediatrics, 2021. - 1100 p.
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* **Study Guide for Practical Work of Students**

for foreign students 6 course medical institute with

English form of education

**Topic: “Differential diagnostic of acute infections of central nervous system in children”.**

Course   VI

English-speaking  Students’ Medical Institute

Duration of the lesson: 4 hours

**Educative aims of the study.**

To facilitate:

The formation of deontology concepts and practical skills related to patients with acute infections of CNS.

To acquire the skills of psychological contact establishment and creation of trusting relations between the doctor and the patient and his parents.

The development of responsibility sense for timeliness and completeness of patient’s investigation.

*A student should be able to:*

Perform diagnostic options in patient with acute infections of CNS. Make differential diagnosis. Interpret data of laboratory studies.

Students should be given knowledge about symptomatic, diagnosis and treatment of acute infections of central nervous system (CNS).

*A student should know:*

Etiological factors of common acute infections of CNS. Pathogenesis and clinical manifestations of acute infections of CNS. Common complications of acute infections of CNS. Diagnostic of acute infections of CNS and its complication. Specific diagnostic. Differential diagnostic of acute infections of CNS. Treatment of acute infections of CNS. Principles of prophylaxis. Specific prophylaxis. Vaccination.

Acute infection of the central nervous system (CNS) is the most common cause of fever associated with signs and symptoms of CNS disease in children. Infection may be caused by virtually any microbe, the specific pathogen being influenced by the age and immune status of the host and the epidemiology of the pathogen. In general, viral infections of the CNS are much more common than bacterial infections, which in turn are more common than fungal and parasitic infections. Infections caused by rickettsiae (e.g., Rocky Mountain spotted fever and Ehrlichia) are relatively uncommon but assume important roles under certain epidemiologic circumstances. Mycoplasma spp also can cause infections of the CNS, although their precise contribution often is difficult to determine.

Regardless of etiology, most patients with acute CNS infection have similar clinical syndromes. Common symptoms include headache, nausea, vomiting, anorexia, restlessness, and irritability. Unfortunately, most of these symptoms are quite nonspecific. Common signs of CNS infection, in addition to fever, include photophobia, neck pain and rigidity, obtundation, stupor, coma, seizures, and focal neurologic deficits. The severity and constellation of signs are determined by the specific pathogen, the host, and the anatomic distribution of the infection. The anatomic distribution of infection may be diffuse or focal. Meningitis and encephalitis are examples of diffuse infection. Meningitis implies primary involvement of the meninges, whereas encephalitis indicates brain parenchymal involvement. Because these anatomic boundaries are often not distinct, many patients have evidence of both meningeal and parenchymal involvement and should be considered to have meningoencephalitis. Brain abscess is the best example of a focal infection of the CNS. The neurologic expression of this infection is determined by the site and extent of the abscess(es).

The diagnosis of diffuse CNS infections depends on careful examination of cerebrospinal fluid (CSF) obtained by lumbar puncture (LP).

**References**:

1. Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.
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**Study Guide for Practical Work of Students**

for foreign students 6 course medical institute with

English form of education

**Topic: “Emergencies are related with acute infections of central nervous system in children. Diagnostic. Treatment”.**

Course   VI

English-speaking  Students’ Medical Institute

Duration of the lesson: 4 hours

1. **Background.**

Acute infection of the central nervous system (CNS) is the most common cause of fever associated with signs and symptoms of CNS disease in children. Infection may be caused by virtually any microbe, the specific pathogen being influenced by the age and immune status of the host and the epidemiology of the pathogen. In general, viral infections of the CNS are much more common than bacterial infections, which in turn are more common than fungal and parasitic infections. Infections caused by rickettsiae (e.g., Rocky Mountain spotted fever and Ehrlichia) are relatively uncommon but assume important roles under certain epidemiologic circumstances. Mycoplasma spp also can cause infections of the CNS, although their precise contribution often is difficult to determine.

Regardless of etiology, most patients with acute CNS infection have similar clinical syndromes. Common symptoms include headache, nausea, vomiting, anorexia, restlessness, and irritability. Unfortunately, most of these symptoms are quite nonspecific. Common signs of CNS infection, in addition to fever, include photophobia, neck pain and rigidity, obtundation, stupor, coma, seizures, and focal neurologic deficits. The severity and constellation of signs are determined by the specific pathogen, the host, and the anatomic distribution of the infection. The anatomic distribution of infection may be diffuse or focal. Meningitis and encephalitis are examples of diffuse infection. Meningitis implies primary involvement of the meninges, whereas encephalitis indicates brain parenchymal involvement. Because these anatomic boundaries are often not distinct, many patients have evidence of both meningeal and parenchymal involvement and should be considered to have meningoencephalitis. Brain abscess is the best example of a focal infection of the CNS. The neurologic expression of this infection is determined by the site and extent of the abscess(es).

The diagnosis of diffuse CNS infections depends on careful examination of cerebrospinal fluid (CSF) obtained by lumbar puncture (LP).

1. **Primary aims of the study.**

Students should be given knowledge about symptomatic, diagnosis and treatment of acute infections of central nervous system (CNS) and their complications.

*A student should know:*

1. Etiological factors of common acute infections of CNS.
2. Pathogenesis and clinical manifestations of acute infections of CNS.
3. Common complications of acute infections of CNS.
4. Diagnostic of acute infections of CNS and its complication. Specific diagnostic.
5. Differential diagnostic of acute infections of CNS.
6. Treatment of acute infections of CNS.
7. Principles of prophylaxis. Specific prophylaxis. Vaccination.

*A student should be able to:*

1. Perform diagnostic options in patient with acute infections of CNS.
2. Make differential diagnosis.
3. Interpret data of laboratory studies.
4. Perform first aid and step-wise treatment depends on stage of care.

**References**:

1. Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.
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**Study Guide for Practical Work of Students**

for foreign students 6 course medical institute with

English form of education

**Topic: “Differential diagnostic acute intestinal diseases in the young children”**

Course   VI

English-speaking  Students’ Medical Institute

Duration of the lesson: 4 hours

***The theme  urgency***

Acute intestinal diseases (AII) are a leading cause of mortality and morbidity in the young children. The diagnosis and differential diagnosis of AII in the children of early age are very difficult, because clinical symptoms of initial period of these diseases have similar displays.  Duration and consequences of disease are depended from a timeliness and adequacy of the appointed therapy of AII.

Adequate and timely antiepidemic  measures   can  prevent the spread of disease in the child's collectives (include a «hospital» way of transmission).

  That is why doctor must know about course of AII and principles of rational therapy.

**The aim of the study**: to teach students on the basis of information of anamnesis of illness, epidanamnesis and clinical displays diagnose GKI in the children of early age, to make a differential diagnosis and  antiepidemic  measures in the nidus of infection.

**A student must know:**

1. Etiologic structure and epidemiology features of AII in the children of early age.
2. Features of diagnostics of syndromes of AII (gastritis, enteritis, enterocolitis, gastroenteritis, gastroenterocolitis) and their accordance of the nosology forms of AII.
3. Clinical features of AII depending on age, methods of laboratory diagnostics of AII.
4. Differential diagnostics of AII (dysentery, salmonellosis, escherichiosis, yersiniosis, rotaviral infection) in the children of  the first three  years of life.
5. Indications for hospitalization patients with AII.
6. A supervision and treatment of children with AII in the policlinic.
7. Indication for  antibacterial therapy, principles of oral rehydration  and pathogenetic  therapy.
8. Disease measures in the hearth of AII.

**A student must be able:**

1.      To adhere to the basic rules of work near a bed of sick with AII.

 2.     To collect anamnesis of disease, estimate epidemiology information.

3.      To collect anamnesis of the life.

 4.     To examine a patient and find out the basic clinical symptoms of AII. To estimate the state of sick child, symptoms of toxicosis with dehydration, character of emptying, changes in the nervous system, cardio-vascular system, urinary system.

 5.     To ground a previous diagnosis.

6.      To appoint the additional methods of  examination  and estimate their results.

7.      To ground a final diagnosis according  to the clinical classification.

8.      To prescribe  treatment taking into account etiology, pathogenesis  of AII (invasion or secretory diarrhea), severity of illness.

9.      To write the recipes on basic medicines.

10.    To conduct disease measures in the hearth of AII.

**The scheme of curatio children  on the topic:**

**“**Differential diagnostic and principles treatment acute intestinal diseases in the children**”**

|  |  |  |
| --- | --- | --- |
|  | A research object | A sequence of executions |
|  | Case history, patient, parents of the patient | Anamnesis of disease :   * A date * the first signs * the   date of address to the doctor * sequence of development of symptoms * character of inspection and treatment at home Epidemiology anamnesis: * A contact is with persons, which have disorders of gastroenteric highway * For infants  character of feeding (breastfeeding, mixed , formula) * the possible use of poor quality meal, contaminated food, drink of water, from natural sources * The past medical history (history of other recent infections, medications) |
|  | Sick child, parents of the patient | Anamnesis of life (according to general rules).  Complaints.  Examination of the patient:   * state of patient (weakness, somnolence, violation of consciousness, anxiety, excitation) * temperature of body * skin (a pallor, dryness, increase of humidity, «marbleness»,   turgor) * mucous membranes  (dryness of tongue, lips, scleras) * the anterior fontanelle   (sunken, bulging) * breathing  system * cardio-vascular system * the state of the nervous system * organs of abdominal region (a form of abdomen, tension of muscles of front abdominal wall, state of intestine ( is the exaggerated loops, spasm of sigma-meson, tenderness),   liver, spleen) |
| **3** | Laboratory data | To analyse:   * a complete  blood  count * an analysis of urine * coprograma * the bacteriological analysis of feces * the biochemical blood  analysis * serological analysis |
| **4** | A list of the medical appointments | To learn:   * the features of the mode and diet * a volume and character of regidration (oral, intravenous) * etiotropic therapy * pathogenetic  therapy * symptomatic  therapy |
| **5** | To design a curacio letter | To include:   * Anamnesis of disease * epidanamnesis * the pathological symptoms and syndromes at the time of   hospitalization * examination sick, dynamics of pathological process during treatment * data of laboratory study * to  ground a diagnosis according to classification * to prescribe treatment , to write recipes * to  estimate the therapy of patient * to define disease measures in the hearth of infection |

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Study Guide of Practical Work

for foreign students 6 course medical institute with

English form of education

**Topic: “An emergency medical conditions in the young children with acute intestinal diseases. Diagnostics. Treatment.”**

Course 6

Foreign Students’ Medical Institute

Duration of the lesson: 4 hours

***The theme urgency***

             Worldwide, acute intestinal diseases (AII) remain one of the most common illnesses among children of early age. Development dehydration and neurotoxicosis cause severe conditions in the children of this age group.  A doctor must know early symptoms of these emergency conditions, methods of laboratory diagnostics and principles of therapy.

**The aim of the study**

            To learn to find out the clinical symptoms of dehydration and neurotoxicosis in the children with AII, to conduct laboratory diagnostics of these states and appoint treatment.

**A student must know:**

1.         Types of diarrhea are depending on the mechanism of development and clinical displays.

2.         Etiology, pathogenesis and clinic of invasion diarrhea in the children of early age.

3.         Etiology, pathogenesis and clinic of secretory diarrhea in the children of early age.

4.         Pathogenesis of  dehydration.

5.         Clinical features of different types of  dehydration (isotonic, saline-deficit, watery-deficit) in the younger children.

6.         Clinical features of different degrees of dehydration (I, II, III).

 7.        Pathogenesis of neurotoxicosis.

 8.        Clinical symptoms of neurotoxicosis in  the younger children with AII.

 9.        Principles of treatment of neurotoxicosis.

 10.      Principles of treatment of dehydration.

**A student must be able:**

  1.       To examine a patient and find out clinical symptoms, what characteristic for dehydration and neurotoxicosis.

 2.        To determine a type and degree of dehydration.

 3.        To appoint additional examination.

 4.        To estimate the results of laboratory examination.

5.         Find diagnostic clinical criterions of toxicosis with exicosis during examination of patients.

6. To perform differential diagnosis among diseases which have the same clinical features.

7. To perform prehospital and hospital treatment of children in case of toxicosis with exicosis.

8. On the basis of clinic-laboratory information to formulate a diagnosis.

9.         To appoint treatment taking into account a type and degree of dehydration, neurotoxicosis.

10. To prescribe measures in the focus of infection

**Aids and material tools:**Charts “Acute bowel infections”, “Toxicosis with exicosis”.

**Student’s practical activities**:

 I. Curation of patients with acute bowel infections in children infectious department.

1. Ask complaints, anamnesis and life history.
2. Examine the patients; find clinical features of acute bowel infection, toxicosis and exicosis.
3. Prescribe laboratory investigations to prove the diagnose.

II. To perform the diagnosis:

1. Make previous diagnose due to complaints, disease history, epidemiological anamnesis, clinical objective features.
2. Make complete diagnose due to previous diagnose, laboratory dates, differential diagnosis.

III Provide the treatment (diet, medicine) depending on patient’s age, severity of the disease.

IV Prescribe measures in the focus of infection, prevention of the disease.

V Clinical analyzing of the case.

**The content of theme.**

Toxic encephalopathy (neurotoxicosis) is a reaction of organism on pathogen, which is characterized neurological disorders, disorder of microcirculation, metabolism, function of heart, lights and CNS. Toxins cause disorders of microcirculation with activation centers of sympathetic  nervous system .  Consequences of it are a tissue hypoxia and acidosis, which cause functional insufficiency organs and systems.

 There are clinical syndromes in the acute period of toxic encephalopathy:

* is sharp excitation, motiveless  monotonous scream
* dizziness, tonic-colonic seizures
* rise a temperature up to 39-400C
* hemodynamic disorders: tachycardia to 180-220 per min., a pallor, cyanosis,    cold extremities
* disturbance of breathing: tachypnoea, the toxic breathing
* renal disturbance: decreased urination, azotemia, proteinuria
* clinical and laboratory signs of DIC-syndrome: hemorrhage in the skin,    bleeding, thromboses, a low fibrinogen concentration in blood, thrombocytopenia, increase of level of soluble fibrin, fibrinolysis
* metabolic acidosis.

Depending on correlation of defeat of different organs and systems select two basic forms of toxic encephalopathy: with predominance of neurological disorders or hemodynamic disorders.

Encephalopathy I degree characterized a motive anxiety, high temperature of body, short times seizures .

Encephalopathy II degree shows up fever, oppression of consciousness to somnolence, to sopor. A general-brain and meningeal symptoms are present. Seizures are possible. A tachypnoea, tachycardia, oliguria are characteristic.

Encephalopathy III degree is characterized seizures with disorders of breathing and cardiac activity. There are pallor and total cyanosis, muscular hypotonia, tachycardia or bradicardia with the signs of heart failure, displays of DIC-syndrome. Urine output is decreased significantly.

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Study Guide of Practical Work

for foreign students 6 course medical institute with

English form of education

**Topic: “An emergency medical conditions and differential diagnosis viral hepatitis in the children.”**

Course 6

Foreign Students’ Medical Institute

**Duration of the lesson: 4 hours**

***The theme urgency***

Viral hepatitis occupy the third place in the structure of children infectious morbidity after ARVI and acute intestinal diseases. Successes in diagnostics of viral hepatitis are a powerful stimulus for the decision of questions of pathogenesis, treatment and prophylaxis. From these positions important understanding of variety of clinical variants of disease and correct estimation clinic-laboratory dates for establishment of final diagnosis and subsequent  medical tactic. A differential diagnostics of viral hepatitis with other infectious and somatic diseases are very actually.

**The aim of the study**

Purpose of employment: to teach students on the basis of anamnesis of illness, epidanamnesis  and clinic-laboratory dates to conduct differential diagnostics of viral hepatitis with the jaundices of other etiology, in time to diagnose development of the emergency medical conditions.

**Basic level:**

1. To know how to ask complaints, disease history, life history in children (Propedeutic pediatrics)
2. To perform the clinical examination of the child (Propedeutic pediatrics).
3. To know microbiology, pathophysiology, pathomorphology, of viral hepatite (microbiology, pathophysiology, pathomorphology).
4. To diagnose viral hepatitis after clinical and laboratory examination (infection diseases, propedeutic pediatrics, microbiology, pathophysiology, biochemistry).
5. To give etiological, pathogenetical, symptomatical treatment (pharmacology).

**A student must know:**

             1.        Clinical features of viral hepatitis in the children in the different periods of disease depending on etiology.

2.         Differential diagnostics of viral hepatitis in the children in the pre- icteric period.

3.         Differential diagnostics of viral hepatitis in the children in an icteric period.

4.         Differential diagnostics of jaundices

5.         Complication of viral hepatitis in the children, clinical signs of the emergency medical conditions, principles of treatment.

**A student must be able:**

             1. To adhere to the basic rules of work near a bed sick with viral   hepatitis.

2. To collect anamnesis of disease.

3. To collect the directed epidemiology anamnesis.

4. To do the clinical examination of child, find out syndromes and symptoms of disease, which specific to viral hepatitis.

5. To set a clinical diagnosis.

6. To work out a plan of examination (clinic, biochemical, serum researches, able them to estimate) for clarification of diagnosis.

7. To conduct the differential diagnosis of viral hepatitis with diseases which are accompanied an jaundice.

 8. To diagnose the emergency medical conditions in the children with viral hepatitis.

**Educate aims:** question  of deontology during work with patients with viral hepatitis.

**Interdisciplinary  integration.**

  A student must know:

1.         Laboratory methods of diagnostics of jaundice.

2.         Laboratory methods of diagnostics of viral hepatitis (serum, biochemical).

3.         Semiotics of the liver diseases.

4.         Physiopathology of liver (metabolic, protective functions of liver, produces and excretes bile).

 A student must be able:

 1.        To conduct inspection sick with the syndrome of jaundice.

2.   To appoint laboratory examination  a patient with an jaundice.

3.         To estimate information of laboratory researches (global analysis of blood, urine, biochemical indexes of blood).

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Study Guide of Practical Work

for foreign students 6 course medical institute with

English form of education

**Topic: “Influenza and acute respiratory viral infections.  
Differential diagnostic. Urgent conditions”.**

Course 6

Foreign Students’ Medical Institute

**Duration of the lesson: 4 hours**

**I. The theme urgency.**

**Acute respiratory viral infections** (ARVIs) are the most common infectious illnesses in the general population. Synonym of ARVI is Upper Respiratory Tract Infection (URTI or URI). ARVI are the leading reasons for people missing work or school, and they represent the leading acute diagnosis in the office setting. Separately, ARVIs rarely cause permanent complications or death, although ARVIs may serve as a gateway to infection of adjacent structures, resulting in otitis media, bronchitis, bronchiolitis, pneumonia, sepsis, meningitis, intracranial abscess, and other infections. Serious complications may result in clinically significant morbidity and rare deaths.

**Influenza** or Flu is an acute respiratory disease of viral etiology (ARVI), which is characterized by expressed symptoms of intoxication and affection of the upper respiratory tracts, first and foremost the trachea. Influenza viruses also can cause pandemics, during which rates of illness and death from influenza-related complications can increase dramatically worldwide. Influenza viruses cause disease among all age groups. Rates of infection are highest among children, but rates of serious illness and death are highest among persons aged >65 years and persons of any age who have medical conditions that place them at increased risk for complications from influenza.

**Basic level**

1. To know how to ask complaints, history of the disease and life in children [propedeutic pediatrics].
2. To perform clinical examination of the child [propedeutic pediatrics].
3. To know microbiology, pathophysiology, pathomorphology and clinical features of Influenza, upper respiratory viral infections, diphtheria, whooping cough, measles, chickenpox [Microbiology, pathophysiology, and pathomorphology, Children infectious diseases].
4. To diagnose croup syndrome after clinical, laboratory and instrumental examination of sick person [infection diseases, propedeutic pediatrics, microbiology, and pathophysiology].
5. To give etiological, pathogenetical and symptomatical treatment of croup syndrome [pharmacology].
6. To prevent diseases that may be complicated by croup syndrome.

**Primary aims of the study.**

To teach students major methods of acute respiratory infection diagnosis and treatment.

*A student should know:*

1. Etiological factors of common upper respiratory tract infections (influenza incl.).
2. Syndromes – specific manifestation of ARVIs (rhinitis, pharyngitis, laryngitis, laryngotracheitis, bronchitis, bronchiolitis).
3. Pathogenesis and clinical manifestations of ARVIs.
4. Common complications of ARVIs.
5. Diagnostic of ARVI and its complication. Specific diagnostic.
6. Treatment of ARVIs. Specific treatment of influenza.
7. Principles of prophylaxis. Specific prophylaxis. Vaccination.

*A student should be able to:*

1. Perform diagnostic options in patient with ARVIs.
2. Make differential diagnosis.
3. Interpret data of laboratory studies.

**Educative aims of the study.**

To facilitate:

1. The formation of deontology concepts and practical skills related to patients with ARVIs.
2. To acquire the skills of psychological contact establishment and creation of trusting relations between the doctor and the patient and his parents.
3. The development of responsibility sense for timeliness and completeness of patient’s investigation.

**Student’s practical activities**:

    I. To perform the diagnosis:

         1. Ask complaints, anamnesis and life history.

         2. Examine the patients, find clinical features of disease

         3. Make diagnose due to clinical and laboratory dates.

    II  Provide the treatment of croup syndrome and prevention of diseases that may be complicated by croup syndrome.

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Study Guide of Practical Work

for foreign students 6 course medical institute with

English form of education

**Topic: “Immunoprophylaxis of infectious diseases**

**of infectious diseases. Vaccination.”**

Course 6

Foreign Students’ Medical Institute

**Duration of the lesson: 4 hours**

**Aim:** to know how to prescribe measures in the foci of different infections (nonspecific prevention), specific prevention of children infectious diseases according to the immunization schedule.

**Professional motivation:**Protection from infectious disease is referred to immunity. That’s why immune prophylaxis is the most potential method of infectious diseases prevention. World experience shows that potential risk of postimmunization reactions and complications is very low. And risk of infectious diseases’ complications and mortality really overweight them. Ambulatory pediatrician plays the main role in immune prophylaxis program. Organization of immune prophylaxis is the main prophylactic work of the ambulatory pediatrician.

**Basic level**

1. Epidemiological peculiarities of “controlled” infections: mumps, measles, rubella, diphtheria, pertussis, poliomyelitis, tetanus, viral hepatitis [microbiology, children infectious diseases].
2. Immunization schedule [children infectious diseases].

**Students’ independent study program.**

**1. Objectives for students' independent studies.**

You should prepare for the practical class using the existing textbook and lectures. Special attention should be paid to the following:

**The immunoprophylaxis task** is management by immunological answer to prevent the disease beside separate persons and groups of the population.

**The ways of the immunoprophylaxis**:

Active - stimulation of own antibodies production,

Passive - introduction of ready antibodies.

**Vaccinal preparations characteristic**

1. Vaccines, which include complete killed microorganisms (pertussis, typhoid, cholera) or inactivated viruses (influenza, poliomyelitis Salk vaccine)
2. Anatoxins, which contains inactivated toxin of the bacteria (diphtheria, tetanus)
3. The vaccines from alive attenuated viruses (measles, mumps and others.)
4. Vaccines, which contains crossing alive microorganisms (BCG)
5. Chemical vaccines from fraction of killed microorganisms (pneumococcal, meningococcal)
6. Gene-engineering recombinant, chemical synthesized (hepatitis В, influenza)
7. Associated (in composition of which enters several vaccines)

**Composition of vaccines:**

1.   Active or immunizing antigens

2.   Fluid base

3.   Preservatives, stabilizers, antibiotics

4.   Auxiliary facilities

**Ways of the vaccination**

1.   Intramuscular (DTP, DT, DT-M, antirhabic, meningococcal B)

2.   Subcutaneous (measles, mumps, rubella, meningococcal A+C)

3.   Intracutaneous (BCG)

4.   On skin (plague, tularemia, brucellosis)

5.   Peroral (poliomyelitis)

6.   Intranasal (Influenza, inactivated)

**Aids and material tools:**Charts “Immunization schedule”.

**Student’s practical activities**:

1. Writing of individual Immunization schedule to healthy children.
2. Writing of individual Immunization schedule to children in case of contraindications, late immunization and other problems.
3. Prescribe epidemiological measures in the focus of infection, specific prevention of the disease.
4. Diagnosing, treatment and prevention of postimmunization reactions and complications.

**Students must know:**

1. Recommended immunization schedule for infants and children.
2. Ukrainian immunization schedule.
3. DTP Vaccine: characteristics, immunization schedule, risks, contraindications.
4. MMR vaccine: characteristics, recommendations, precautions and contraindications, adverse reactions.
5. Polio vaccine: characteristics, immunization schedule, risks, contraindications.
6. Varicella zoster (chicken pox) vaccine: characteristics, immunization schedule, risks, contraindications. Varicella-zoster immune globulin.
7. Hepatitis B virus vaccine: characteristics, immunization schedule, risks, contraindications.
8. Hepatitis A virus vaccine: characteristics, indications, contraindications, side effects.
9. Influenza vaccine: characteristics, immunization schedule, risks, contraindications.
10. Normal postimmunization reactions and complications: clinical features, treatment prevention.
11. Еpidemiological measures in the focus of infection.
12. Specific passive prevention of diseases by immune globulin.

**Student should be able to:**

1. Write individual Immunization schedule to healthy children.
2. Write individual Immunization schedule to children in case of contraindications, untime immunization and other problems.
3. Prescribe epidemiological measures in the focus of infection, specific prevention of the disease by immune globulin.
4. Diagnose, treat and prevent of postimmunization reactions and complications.

**References**:

1. Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.
2. Manual of Children's Infectious Diseases [Текст] = Дитячі інфекційні хвороби : навч. посіб. / O. Ye. Fedortsiv, I. L. Horishna, H. A. Pavlyshyn, I. M. Horishnyi. — Vinnitsia : Nova Knyha, 2020. — 440 p.
3. 2. Infant and Young Child Nutrition (0–23 months) : recommendations [Текст] / O. V. Katilov, A. V. Varzar’, O. Yu. Belousova etc. — Vinnytsia : Nova Knyha, 2019. — 64 p.

**Additional:**

1. [2019 Nelson's Pediatric Antimicrobial Therapy, 25th Edition](https://ebooks.aappublications.org/content/2019-nelsons-pediatric-antimicrobial-therapy-25th-edition) By John D. Nelson, MDEdited by John S. Bradley, MD, Elizabeth D. Barnett,  MD and  Joseph B. Cantey, MD Book | Published in 2018.- 331 p. <https://reader.aappublications.org/2019-nelsons-pediatric-antimicrobial-therapy-25th-edition/1>
2. World Health Organization. Diphtheria [website]. Geneva: World Health Organization; 2017URL  <http://www.who.int/> immunization/monitoring surveillance/burden/diphtheria/en/
3. Red Book 2021: Report of the Committee on Infectious Diseases (Red Book Report of the Committee on Infectious Diseases), 32-d Edition / David W. Kimberlin MD FAAP, Dr. Elizabeth Barnett M.D., et al. // American Academy of Pediatrics, 2021. - 1100 p.
4. Infectious diseases and epidemiology: textbook / V. I. Pokrovsky, N. I. Briko, B. K. Danilkin. - 3rd ed., Rev. and add. - M .: GEOTAR-Media, 2016 .- 1008 p.

Інформаційні ресурси в Інтернеті

1. https://moz.gov.ua/ Міністерство охорони здоров’я України

2. https://www.cdc.gov/ Centers for Disease Control and Prevention

3. https://www.who.int/wer/en/ Weekly Epidemiological Record

4. https://www.ecdc.europa.eu/en European Centre for Disease Prevention and Control

5. https://pubmed.ncbi.nlm.nih.gov/ PubMed

6. https://www.ecdc.europa.eu/en European Centre for Disease Prevention and Control

7. https://www.nlm.nih.gov/ U. S. National Library of Medicine