"The Orenburg state medical University"

**METHODICAL DEVELOPMENT**

**FOR THE TEACHER TO CONDUCT PRACTICAL LESSON 8**

Theme " Immunoprophylaxis of infectious diseases (Part 1) "

**DISCIPLINE "EPIDEMIOLOGY"**

**WITH STUDENTS OF THE 5TH COURSE   
OF THE FACULTY OF FOREIGN**

Methodical recommendations are developed

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**Module 2. Epidemiological control**

# 1. The competence generated:

|  |  |  |
| --- | --- | --- |
| Cipher  competence | №  competence | Elements of competence |
| Cultural competence | СС-1 | ability for abstract thinking, analysis, synthesis; |
| General professional competence | GPC-1 | willingness to solve standard tasks of professional activity with the use of  information, bibliographic resources, biomedical terminology, information and communication technologies and taking into account the basic requirements of information security; |
| Professional competence | PC-3 | ability and willingness to undertake anti-epidemic measures, organisation of protection  the population in the foci of particularly dangerous infections, the deterioration of the radiation situation, natural disasters and  other emergencies |

## Practical lesson № 8

# 2. Subject:

Immunoprophylaxis of infectious diseases (part 1)

# 3. Objective:

To acquire knowledge of modern methods of immunoprophylaxis of infectious diseases.

# 4. Tasks:

***Training:***

* To study the features of the formation of artificial immunity.
* To study the peculiarities of the formation of collective immunity.
* To study modern preparations for immunoprophylaxis.
* Examine contraindications for immunoprophylaxis.
* Examine сonditions after vaccination

***Educational:***

* Have an idea of modern methods of immunoprophylaxis

***Raising:***

* To possess knowledge of the application of methods of immunization in practice.

# 5. Questions for consideration:

* The history of immunoprophylaxis
* Types of immunity
* Herd immunity
* Preparation for active immunization
* Contraindication to immunization
* Conditions after vaccination

# 6. Basic concepts of the theme

* Innate immunity
* Acquired immunity
* Herd immunity
* Active immunization
* Vaccines
* Constant contraindication to immunization
* Temporal contraindication to immunization
* Reactions after vaccination
* Adverse events after vaccination

# 7. Recommended reading:

1. Main literature:

* Methodical recommendations «Modern epidemiological methods in medical practice» of the Department of Epidemiology and Infectious Diseases
* Rothman, Kenneth J.; Greenland, Sander; Lash, Timothy L. Modern epidemiological. 3rd edition. 2008 Lippincott Williams & Wilkins. 1581 p.

2. Additional literature:

* O.V. Kovalishena, V.V. Shkarin, N.V. Saperkin, M.M. Khramtsov. Epidemiology of inflectional disease. Учебник. Издательство: «Смоленская городская типография», 2016. 284 с.

# 8. Activity and time of lesson

|  |  |  |  |
| --- | --- | --- | --- |
| № | The stages and content of the classes | The methods used | time |
| 1 | The organizational part.  The announcement of the theme, the objectives of the class.  Readiness assessment of the classroom, equipment and students.  Brief description of the stages and content of work of students in the class. |  | 5 minutes |
| 2 | Incoming control of knowledge, abilities and skills of students.  The terminological dictation | Handout  A written answer to the question | 5 minutes |
| 3 | Updating of theoretical knowledge | Analysis of theme elements and the construction of logical graphs on the board. | 1 hour 15 minutes |
| 4 | The development of practical skills. Case solving. | Cases | 30 minutes |
| 5 | Quality control of the formed competence /elements of competence (knowledge and skills) students on lessons  Output control | Written test | 15 minutes |
| 6 | The final part of the class:  Summarizing, the findings on the topic.  Homework | - | 10 minutes |

# 9. Form of organization class

instructional workshop (workshop)

# 10. Learning tools:

- logistics (multimedia projector)

## Incoming control

|  |  |
| --- | --- |
| **Task** | **Answer** |
| Innate immunity |  |
| Acquired immunity |  |
| Herd immunity |  |
| Constant contraindication to immunization |  |
| Temporal contraindication to immunization |  |
| Reactions after vaccination |  |
| Adverse events after vaccination |  |

## Output control

Choose one correct answer.

1. Live vaccines induce:
2. natural active immunity
3. acquired active immunity
4. natural passive immunity
5. acquired passive immunity
6. Killed vaccines induce:
7. natural active immunity
8. acquired active immunity
9. natural passive immunity
10. innate immunity
11. Live vaccines create:
12. natural active immunity
13. acquired passive immunity
14. artificial active immunity
15. artificial passive immunity
16. Inactivated vaccines create:
17. natural active immunity
18. acquired passive immunity
19. artificial active immunity
20. artificial passive immunity
21. An appropriate definition of a vaccine is:
22. a suspension of bacteria or viruses or fractions thereof, administered to induce immunity
23. a modified bacterial toxin that has been rendered nontoxic but that retains the ability to form immunity
24. a sterile solution of human antibodies prepared by special method
25. a solution of antibodies derived from the serum of animals immunized with specific antigens
26. An appropriate definition of a toxoid is:
27. a suspension of bacteria or viruses Or fractions thereof, administered to induce immunity
28. a modified bacterial toxin that has been rendered nontoxic but that retains the ability to form immunity
29. a sterile solution of human antibodies prepared by special methods
30. a solution of antibodies derived from the serum of animals immunized with specific antigen
31. An appropriate definition of an antitoxin is:
32. a suspension of bacteria or viruses or fractions thereof, administered to induce immunity
33. a modified bacterial toxin that has been rendered nontoxic but that retains the ability to form immunity
34. a sterile solution of human antibodies prepared by special methods
35. a solution of antibodies derived from the serum of animals immunized with specific antigens
36. The primary series of vaccination with opv (ipv) consist of:
37. 1 dose
38. 2 doses
39. 3 doses
40. 4 doses
41. An appropriate immunization recommendation against measles is:
42. a single dose MMR vaccination schedule
43. a two-dose MMR vaccination schedule
44. a three-dose MMR vaccination schedule
45. vaccination is not obligatory
46. An appropriate immunization schedule against hepatitis в includes:
47. intramuscular injections at 0,1, and 6 months
48. intramuscular injections at 0,3, and 6 months
49. intramuscular injections at 0,2,3, and 12 months
50. intramuscular injections at 0,1,2, and 24 months
51. A protective level for diphtheria (in elisa) is the following antibody concentration:

a) 0.03 IU/ml

b) 0.06 IU/ml

c) 0.01 IU/ml

d) 0.02 IU/ml

1. An antibody concentration which is considered to be a protective level for tetanus (in elisa) is:

a) 0.03 IU/ml

b) 0.06 IU/ml

c) 0.01 IU/ml

d) 0.02 IU/ml

1. An antibody concentration which is considered to be a protective level for hepatitis в (in elisa) is:

a) 0.03 IU/ml

b) 0.06 IU/ml

c) 0.01 IU/ml

d) 0.02 IU/ml

1. What antibody concentration is considered to be a protective level for measles?
2. 1:20
3. 1:10
4. 1:8
5. 1:16
6. What antibody concentration is considered to be a protective level for influenza?
7. 1:20
8. 1:10
9. 1:8
10. 1:16
11. The aim of booster immunizations is:
12. to produce the protection at the first time of vaccination
13. to increase the protection already given by a primary immunization
14. to increase the protection already given by several revaccinations
15. to avoid adverse events after further immunizations
16. An appropriate definition of herd immunity is the following:
17. a post-infection immunity of a specified group of people
18. an immunity of a specified group of people caused by vaccination
19. a protection of population independent on a way of immunization
20. a latent immunization of a specified group of people
21. An appropriate scheme of immunization for measles (according to russian schedule) is the following:
22. at 12 months, 6 years
23. at 10 months, 6 years
24. at 6 months
25. at 12—13 months
26. An appropriate scheme of immunization for diphtheria (according to russian schedule) is the following:
27. vac. - 3, 4, 5, 6 mo; revac.- 18 mo, 7, 14 years
28. vac. - 3, 4, 5, 6 mo; revac.- 18 mo, 7, 14 years, each 10 years
29. vac. - 3, 4, 5 mo; revac.- 18 mo, 7, 14 years, each 10 years
30. vac. - 3 ,4, 5, 6 mo; revac.- 18 months
31. The vaccine currently used to prevent hepatitis в is constituted by:
32. conjugate of HBsAg and a bacterial toxoid
33. HBsAg isolated from chronic carriers
34. inactivated hepatitis В virus
35. recombinant HBsAg
36. Examples of the live vaccines among listed below:
37. against measles
38. against rabies
39. against hepatitis В
40. the correct answer is missing
41. Examples of the live vaccines among listed below:
42. against poliomyelitis
43. against rabies
44. against hepatitis В
45. the correct answer is missing
46. Examples of the inactivated vaccines among listed below:
47. against poliomyelitis
48. against rabies
49. against hepatitis В
50. all answers are correct
51. Artificial immunity occurs when:
52. individuals are immunized with vaccines
53. individuals are immunized with immunoglobulins
54. individuals are immunized with serum
55. all answers are correct
56. Phases of immune response to vaccination include:
57. lag phase
58. log phase
59. decline phase
60. all answers are correct
61. Match the passive intrinsic of immunity with the way of immunity acquisition:

injection of heterologous immunoglobulin

1. transmission of antibodies from mother to infant
2. injection of homologous immunoglobulin
3. injection of heterologous serum
4. Match the passive artificial of immunity with the way of immunity acquisition:
5. injection of heterologous immunoglobulin
6. injection of homologous immunoglobulin
7. injection of heterologous serum
8. all answers are correct

**Answers**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1.a | 11.a | 21.a |  |  |  |  |  |
| 2.a | 12.a | 22.a |  |  |  |  |  |
| 3.b | 13.c | 23.d |  |  |  |  |  |
| 4.b | 14.b | 24.d |  |  |  |  |  |
| 5.a | 15.a | 25.d |  |  |  |  |  |
| 6.b | 16.c | 26.a |  |  |  |  |  |
| 7.b | 17.c | 27.d |  |  |  |  |  |
| 8.a | 18.a |  |  |  |  |  |  |
| 9.a | 19.a |  |  |  |  |  |  |
| 10.a | 20.d |  |  |  |  |  |  |