Learning Objectives - Pathophysiology

V semester. Module #16 "Infection and Immunopathology"

1. Harmful effects of biological factors on the organism
2. Introduction to Infectious process
3. Definition of commensalism
4. Definition of mutualism
5. Definition of parasitism
6. Non-specific responses of the body to infection and their role in the development of the infectious process
7. The first line of defense
8. The second line of defense
9. Specific protective-adaptive reactions of the body to infection
10. Dysbiosis
11. stages of infectious disease
12. Injurious Effects of Host Immune Responses
13. Complications of infectious disease, sepsis.
14. Principles of etiopathogenic treatment of infectious disease
15. The role of body reactivity in pathology
16. Reactivity and its types
17. Resistance of the organism and its types
18. Innate immunity
19. The major components of innate immunity
20. adaptive immune responses: humoral and cell-mediated immunity
21. Cytokines That Mediate and Regulate Immunity
22. Cells of innate immunity
23. The complement system
24. Defects in innate immunity
25. Defects in Leukocyte functions: Chronic granulomatous disease, Chédiak-Higashi syndrome
26. TLR defects
27. Leukocyte adhesion deficiency (LAD) disorders
28. MPO deficiency
29. Complement system disorders
30. Primary immunodeficiency diseases
31. X-linked agammaglobulinemia of Bruton
32. DiGeorge syndrome
33. Severe combined immunodeficiency
34. Hyper IgM syndrome
35. Immunodeficiencies Associated With Systemic Diseases
36. Wiskott-Aldrich syndrome, Ataxia telangiectasia
37. Acquired Immunodeficiency Syndrome - Human immunodeficiency virus
38. Hypersensitivity disorders
39. Causes of Hypersensitivity Reaction
40. Classification of Hypersensitivity Reactions
41. Type I, Immediate Hypersensitivity Disorders
42. Systemic (Anaphylactic) Reactions
43. Local (Atopic) Reactions
44. Type II, Antibody-Mediated Disorders
45. Complement- and Antibody-Mediated Cell Destruction
46. Antibody-Mediated Cellular Dysfunction
47. Type III, Immune Complex–Mediated Disorders
48. Systemic Immune Complex Disorders
49. Local Immune Complex ReactionsType IV, Cell-Mediated Hypersensitivity Disorders
50. Direct Cell-Mediated Cytotoxicity

51. Delayed-Type Hypersensitivity Disorders
52. Immunologic Tolerance
53. B-Cell Tolerance, T-Cell Tolerance
54. Autoimmune diseases
55. Mechanisms of Autoimmune Disease
56. Cellular adaptations to stress
57. Hypertrophy
58. Hyperplasia, general mechanisms of its development
59. Atrophy
60. Metaplasia
61. Restoration of injured tissue
62. Phases of Repair
63. Angiogenesis and Ingrowth of Granulation
64. Tissue Maturation and Remodeling of the Fibrous Tissue
65. Cutaneous Wound Healing
66. Phases of Healing
67. Healing by Primary and Secondary Intention
68. Phases of Healing
69. Wound healing
70. Characteristics of Benign and Malignant Neoplasms
71. Differentiation and Anaplasia.
72. Growth Properties
73. Invasion
74. Metastatic Spread: Lymphatic Spread, Hematogenous Spread
75. Host and Environmental Factors
76. Chemical carcinogenic factor
77. Ionizing radiation as a carcinogen
78. Oncogenic viruses
79. Genetic and Molecular Basis of Cancer
80. Cancer-Associated Genes
81. Genetic Events Leading to Oncogene Formation or Activation
82. Genetic Events Leading to Loss of Tumor-Suppressor Gene Function
83. Epigenetic Mechanisms
84. Molecular and Cellular Pathways
85. Tumor Cell Transformation
86. Local and regional manifestations of the tumor
87. Systemic Manifestations: anemia, anorexia and cachexia
88. Paraneoplastic Syndromes
89. General description of hereditary, congenital and acquired diseases
90. Genetic and Congenital disorders
91. Disorders involving single or multiple genes
92. Single-Gene Disorders
93. Autosomal Dominant Disorders
94. Autosomal Recessive Disorders
95. X-Linked Disorders
96. Genomic Imprinting
97. Triplet Repeat Mutations: Fragile X Syndrome
98. Mitochondrial Gene Disorders
99. Multifactorial Inheritance Disorders
100. Chromosomal disorders
101. Structural Chromosomal Abnormalities
102. Numeric Disorders Involving Autosomes
103. Numeric Disorders Involving Sex Chromosomes
104. Disorders due to environmental influences