RADIOLOGY, RADIONUCLIDE DIAGNOSTICS AND RADIOTHERAPY EXAMINATION SYLLABUS

I. RADIOLOGY

4. Computed tomography. CT- machines. CT-image. Main indications for CT, advantages and disadvantages of CT.
5. MRI. Basic principles, indications, advantages and disadvantages
8. Imaging methods for investigation of respiratory system
9. Imaging methods for investigation of cardio-vascular system
10. Imaging methods for investigation of gastro-intestinal system
11. Imaging methods for investigation of hepatobiliary-pancreatic system
12. Imaging methods for investigation of genitourinary system
13. Imaging methods for investigation of musculoskeletal system
14. Imaging methods for investigation of central nervous system system
17. Pulmoary embolism and infarction.
18. Lung tuberculosis.
22. Pleural diseases
23. Diseases of the diaphragm.
27. Congenital heart disease with right-left shunting. CHD without shunting.
29. Acquired diseases of aorta and peripheral vessels.
33. Gastric and duodenal ulcer.
35. Ulcerative colitis and Crohn disease. Other forms of intestinal inflammation.
36. Tumors of the colon.
37. Bowel diseases in neonatal and early childhood period
38. Liver. Focal malignant lesions.
40. Cholelithiasis. Complications of cholelithiasis
41. Biliary obstruction (mechanic icterus, jaundice). Diagnostic algorhythm.
42. Pancreatic tumors.
43. Pancreatitis
44. Nephrolithiasis. Hydronephrosis.
45. Acute and chronic inflammatory kidney disease.
46. Tumors of the urinary system.
47. Main pathologic processes in bones. Osteodensitometry.
48. Primary malignant bone tumors.
49. Primary benign bone tumors and tumor-like lesions.
50. Multifocal bone lesions.
51. Inflammatory bone diseases. Osteomyelitis.
52. Reumatoid arthritis.
54. Tuberculuous arthritis and spondilitis.
58. Acute vascular diseases of the brain
59. Traumatic brain leions.
60. CNS tumors.

II. RADIOMUCLIDE IMAGING

61. Main principles of radionuclide imaging. Types of radionuclide imaging. Machines – gamma-camera-planar.SPECT.SPECT//CT
62. Main principles of radionuclide imaging. Types of radionuclide imaging. Machines – PET and PET/CT
64. Radionuclide imaging of the thyroid .General characterization of different types of nodules.
65. Thyroid cancer. Principles of treatment and follow-up
66. Radionuclide imaging of parathyroid glands.
69. scintigraphy-types of examinations, indications and advantages. Benign sceletas diseases.
70. Ventilationa and perfusion scintigraphy of lungs. Indications.
71. Myocardial perfusion scintigraphy. Main principles and indications. Myocardial PET.
72. Radionuclide imaging of the CNS. Brain SPECT-perfusion scintigraphy. Indications. Brain PET
73. Scintigraphic imaging in the diagnostics and DDX of Parcinsons diseases
74. FDG PET/CT- main principles. Patient preparation.
75. FDG PET/CT in lung tumors, tumors of the GIT and thyroid carcinoma.
76. FDG PET/CT in lymphoma, melanoma, gynecological tumors and tumors with unclear origin.
77. Radionuclide therapy-principles. Radionuclide therapy in thyroid diseases. Radionuclide therapy in bone metastases

III. RADIOTHERAPY

78. Ionising radiation in the treatment of malignancy.
79. Theories for biological effects of ionizing radiation.
80. Phases of biological effects of IR.
84. International TNM classification of malignant tumors.
85. Radiotherapy – aims, methods.
86. Stages in planning and performing radiotherapy.
87. Radiation reactions and damage to organs and tissues – early and late.
88. Radiotherapy of breast carcinoma.
89. Radiotherapy of cervical carcinoma.
90. Radiotherapy of uterine body carcinoma.
91. Radiotherapy of seminoma.
92. Radiotherapy of skin carcinoma.
93. Radiotherapy of laryngeal carcinoma.
94. Radiotherapy of epypharingeal carcinoma.

Literature:
1. Basic Radiology, Michael Y.M. Chen, MD; Thomas L. Pope, MD; David J. Ott, MD; 2nd edition year 2011
2. Diagnostic imaging, Peter Armstrong, 6th edition year 2009
4. Lectures in diagnostic imaging.
5. On-line resources – radiopaedia.org