**Ministry of healthcare of the Republic of Kazakhstan**

**The Kazakh Scientific Research Institute of Oncology and Radiology**

 **SILLABUS**

**for students of the residency on the specialty 6R112000 «Radiation therapy»**

**Discipline**

**«Radiation Diagnostics in Radiotherapy and Oncology»**

The amount of teaching hours-180 hours/4 credits

including:

Practical training-60 hours

Independent work -120 hours

Form of control: examination

**Almaty, 2017**

The syllabus is compiled according to the Model curriculum, the Residency Educational Program for the specialty "Radiation Therapy", the Instruction Letter No. 8 for the development of educational and methodological documentation in the organizations of the Republic of Kazakhstan, which are preparing for the residency approved by the Republican Center for Innovative Technologies of Medical Education and Science of the Ministry of Health of the Republic of Kazakhstan on April 27 2010 (Protocol No. 4).

Approved at the meetingRadiological Board

(Protocol 7 from "August" 25, 2017)

**Responsible for the discipline: DMS TelguziyevaZh.A.**

**PhD Savkhatova A.D.**

 **Ishkinin E.I.**

**1.** **General information**

1.1 Kazakh Scientific Research Institute of Oncology and Radiology (address: Almaty, Abai Ave., 91)

1.2 Clinical base (clinical and diagnostic units KazNIIOiR): department Day hospital for radiotherapy, Department of Clinical dosimetry and physical and technical support of radiotherapy, Center for Head and Neck Tumors, Neurooncology Center, Mammology Center, Thoracic Oncology Center, Abdominal Oncology Center, Oncogynecology Center, Oncourology Center, Children's Oncology Center, Department of Hemoblastoses, Center for Tumors of Bones and Soft Tissues, Department of Radiation Diagnostics.

1.3 Specialty: 6 R112000 "Radiation therapy"

1.4 Discipline: «Radiation diagnostics in radiotherapy and oncology»

1.5 The amount of teaching hours: 180 hours/ 4 credits

1.6 Information about the teachers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **First and last name** | **Post** | **Academic degree** | **Priority** **interests** |
| 1 | JoldybayJamilyaJoldybayevna | Head of the department of radiation diagnostics | Doctor of Medical Sciences, Professor | Radiation diagnostics |
| 2 | TelguziyevaZhannatAhmetbekovna | Chairman of the Radiological Board | Doctor of Medical Sciences | Radiation therapy |
| 3 | SavkhatovaAkmaralDosbolovna | Head of the department Day hospital of radiotherapy | PhD | Radiation therapy |
| 4 | IshkininYevgenyIvanovich | Radiation TherapistOncourology Center | Assistant | Radiation therapy |

1.7 Contact information:

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Savkhatova A.D.: 8 707 985 74 39 (mob), e-mail: akma\_s10@mail.ru

Ishkinin E.I.: 8 777 233 29 63 (mob), e-mail: ishkininy@gmail.com

1.8 Policies and Procedures. The policy of discipline consists in the consistent and purposeful implementation of the educational process. Teachers' requirements for residents are based on general principles of education in higher educational institutions of the Republic of Kazakhstan:

* compulsory clothing: standard medical gown or surgical form; indoor shoes; medical mask (carry)
* strict observance of labor discipline in basic institutions
* active participation in the educational process (preparation of theoretical material, solving situational problems and tests, mastering practical skills); attending classes
* mandatory night duty in accordance with the approved plan
* compulsory maintenance of general and specialized medical documentation
* regular self-improvement (working in the library and with the Internet)
* adherence to the principles of medical ethics and deontology in relation to patients and colleagues
* timely informing mentors and the head of the department about temporary incapacity for work or other reasons for absence from the workplace
* penalties: if you miss 3 lessons for disrespectful reasons, work off in the form of night duty and prepare presentations on the topics of missed classes with subsequent protection. Passes of classes for valid reasons are worked out by self-preparation with protection of presentation on missed topics.

**2 Program**

**2.1 Introduction**

The training of highly qualified medical personnel with modern knowledge, skills and practical skills sufficient to provide qualified medical and diagnostic care is an important state task, the solution of which is possible only in the conditions of continuous postgraduate education. The training of qualified physicians - ray therapists is a complex and urgent problem. This program includes the amount of modern knowledge, skills and habits of the resident in the main specialty (radiation therapy) on the basis of the principles of evidence-based medicine with the training of qualified radiological medical personnel.

In this discipline, the role of methods of radiation diagnosis in radiation therapy and general oncology is reflected; the importance of methods of radiation diagnostics in pre-radial preparation of cancer patients for individual planning of radiotherapy is presented; therapeutic and diagnostic significance of the introduction of innovative methods of interventional radiology in oncological practice; questions of the application of radionuclides in the treatment of certain forms of malignant neoplasms are consecrated.

**2.2 The purpose of the discipline** is to acquire and improve knowledge on the use of methods of radiation diagnosis in the practice of treatment of malignant neoplasms.

**2.3 Tasks of the discipline:**

1) To form general knowledge on the basics of radiation methods for diagnosing cancer patients.

2) Develop knowledge on the interpretation of the results of radiation research methods in patients with malignant neoplasms.

3) Develop knowledge on the principles of the use of radiation research methods in the planning and implementation of specialized treatment for cancer patients.

**2.4** **Independent work**

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| --- | --- | --- |
| **№** | **Table of contents** | **Number** **of hours** |
| 1 | Participation in outpatient examination of patients in the reception and advisory department of the Institute with the design of directions for various methods of radiation diagnosis | 10 |
| 2 | Participation in clinical analysis of cancer patients | 10 |
| 3 | Inpatient reception and supervision of cancer patients | 10 |
| 4 | Participation in the management of medical documentation of cancer patients | 10 |
| 5 | Preparation for seminars | 10 |
| 6 | Study of the technique and participation in conducting pre-radial topometry (on ultrasound, CT or computer X-ray simulator) oncological patients at the stage of radiotherapy planning | 10 |
| 7 | Preparation of abstracts: "Interventional radiology in oncological practice", "Application of radioisotope studies in oncology" | 10 |
| 8 | Solution of clinical situation problems | 10 |
| 9 | Participation in consultations, consultations in other clinical units | 10 |
| 10 | Work in the library, with the Internet | 10 |
| 11 | Forming the resident listener's portfolio | 20 |
|  | **Total hours** | **120** |

**2.5** **Recommended literature**

The main literature

1. Balter S. Fundamentals of Clinical Oncology topometry.-m.: medicine, 1986 -254p.

2. Clinical Radiology medical services. Management in 5 vols., edited by academician of RAMS G.a. Zedgenidze, 2005.

4. Lindenbraten L., Korolyuk I. Medical Radiology: Fundamentals of radiation therapy (for high schools, 2-nd Edition)-m.: medicine, 2000.

5. KostylevV., NarkevichB..Medical physics.-m.: Moscow, 2008.-. 126-155.

6. MalakhovskyV., Trufanov G. Radiation safety during radiation therapy//scholastic-methodical allowance for doctors-2011.

7. Møller T., Rife E. Atlas section of human anatomy on the example of CT and MRI slices: in 3 volumes (translation from English; under the AGG ed. Prof. G.e. Trufanova.-m.: MEDpress-inform, 2008.

8. RostovtsevM., 2006. Atlas of rentgenoanatomii and positioning.

9. Radiography guide rentgenoanatomicheskim Atlas positioning: Lane.

10. TrofimovaS. Radiation human anatomy», 2005.

11. Trufanov G. Radiotherapy, 2009.

12. Trufanov G. Radiation Diagnostics, 2007.

13. TrufanovG., Fokin V. Computed tomography, 2007.

14. TrufanovG., Fokin V. Magnetic resonance imaging, 2007.

15. Trufanov G., Boyko I. Basis and clinical application of the radionuclide Diagnostics (PET/CT) and (SPECT). -2004.

Additional literature:

1. Clinical recommendations of the European society of radiation therapists // ESTRO.-2012.

2. Clinical recommendations of the American Society of radiation therapists// ASTRO.-2011, 2012.

3. Clinical the leadership of the NCCN Clinical Practice Guidelines//in Oncology.-Version 2.2012.

6. American Joint Committee on Cancer (AJCC). AJCC Cancer Staging Manual 7th ed. Edge S.B., Byrd D.R. Carducci, M.A. et al., eds. New York: Springer; 2009.

7. Arno J. Mundt, John C. Roeske//Intensity Modulated Radiation Therapy. A Clinical Perspective. -Hamilton • London, 2010.

8. Carlos A., Perez C.,, CutherW., etcPrinciples and Practice of Radiation Oncology.-5-rd Edition, Lippincott-Roven, 2010.

9. Eisenhauer E., Therasse P., Bogaerts J. etc. New response evaluation criteria in solid tumours: Revised RECIST guideline (version 1.1)//European journal of cancer. -V. 45-p. 228-247.

10. Eric K. Hansen, Mack Roach. Handbook of Evidence. Based Radiation Oncology. -2nd Edition. -Springer, 2010.

11. TelguziyevaZh., ZholdybayZh.,Shibanova A. etc. Cervical cancer: epidemiology, pathogenesis, diagnosis, treatment (review of literature)// «Hygiene, epidemiology and Immunology» -Almaty 2011,№2 (48)-P.12-15.

12. TelguziyevaZh., Goncharova T. Study of pharmacokinetics of methotrexate in tumors and in plasma of experimental animals // «Hygiene, epidemiology and immunobiology».-Almaty, 2011. -№4 (50)-Р.161-163.

13. TelguziyevaZh. Philippenko V., ZholdybayZh., Kim S. Application of techniques of complex medical visualization in an estimation chemoradiation therapy of the cancer are //ESTRO Anniversary.-London (UK), 8-12 May 2011-p. 309.

14. TelguziyevaZh. Metronomic chemotherapy with gemcitabine at radical irradiation of the cancer are//The 17th int. Meeting of the ESGO-Milan (Italy), September 11-14, 2011-p. 58.

15. TelguziyevaZh., Kim S., Bainazarova A. The survival rate of patients with cancer are at use of a combination of chemical radiomodificators and radical irradiation//The 18th International meeting of the ESGO-October 19-22, 2013. -Liverpool, UK. -P. 269.

16. TelguziyevaZh., Kim S., Bainazarova A. Perspectives of metronomic chemotherapy in the treatment of cancer are radiological//The 18th International meeting of the ESGO-October 19-22, 2013.-Liverpool, UK-P.794.

17. Ishkinin E., Ongarbaev B., TelguziyevaZh., Kim S. Availability of high-tech methods for the treatment of prostate cancer population in Kazakhstan//Oncology and radiology of Kazakhstan-Almaty, 2016.-№1 (39)-Р.50-54.

18. IshkininE., Ongarbaev B., Kim S., TelguziyevaZh.etc. Experience brachytherapy for prostate cancer //Oncology and Radiology Journal (special issue).-Almaty, 2017.-Р.108.

19. IshkininE., Ongarbaev B., Kim S., TelguziyevaZh. etc. Experience brachytherapy for prostate cancer //Oncology and Radiology Journal (special issue).-Almaty, 2017.- P.161

20. Telguziyeva Zh., TrushchenkoO., Kaibarov M. Application of intensevly-modulated radiation therapy in the treatment of locally-common forms of malignant head and neck tumors.// Oncology and Radiology Journal (special issue). -Almaty, 2017. -P. 164

21. TelguziyevaZh.,Filippenko V. Patent №22356 invention «Method of treatment for cervical cancer» (15.03.2010)

22. Telguziyeva Zh.,Filippenko V. Patent №22490 invention «Method of treatment for cervical cancer» (17.05.2010)

23. Telguziyeva Zh.,Filippenko V. Patent №23075 invention «Method of integrated Ultrasound techniques to evaluate the efficiency of combined radiation therapy for cervical cancer» (15.11.2010)

24. TelguziyevaZh., BaimahashevaA., Filippenko V. etc Patent №23100 on invention «Method of treating patients with cervical cancer» (15.11.2010)

25. TelguziyevaZh.,Filippenko V., ZholdybayZh. etc. Patent №23404 from 15.12.2010 on the invention of «The way to improve the effectiveness of radiation therapy for cervical cancer»

26. Periodic protocols for diagnosis and treatment of malignant neoplasms (2012, 2015).

27. «The clinical guide to oncology» //Almaty, 2016.

28. Act implementing the master-class «High-tech radiotherapy-radiosurgery» in KazNIIOiR (31.03-04.04.2016)

29. Act implementing the master-class «High-tech radiation therapy radiation oncology (joint master class for radiologists and medical physicists)»in KazNIIOiR (28.06-02.07.2016)

30. Act implementing the master-class «High-tech radiation therapy radiation oncology» in KazNIIOiR (18.10-22.10.2016)

31. IshkininE., Kim V., Ibraimova M. etc. Radiation treatment of patients with kidney cancer with metastatic bone lesion // V Congress of oncologists and radiologists Kazakhstan-Almaty 2014.-№180-Р.106-107

32. IshkininE., Kim V., Antropova T. etc. Evolutionary development of radiotherapy for prostate cancer in the Republic of Kazakhstan // V Congress of oncologists and radiologists Kazakhstan-Almaty 2014.-No. 181-c. 107

33. Kim V., IshkininE., Almabek A. etc. Pre-radialtopometry training in 3d conformal and intensely-modulated radiation therapy, experiences in Kazakhstan // V Congress of oncologists and radiologists in Kazakhstan. -Almaty, 2014-No. 185-P. 109-110

34. Malignant tumors of testicular, prostate cancer, renal cell carcinoma, bladder cancer// Periodic protocols of diagnostics and treatment of malignancies.-Almaty, 2012.-325-377

35. Guide for the target groups of the male population screening for early detection of prostate cancer and ensure its quality// NurgaliyevN., Zhylkajdarova A., Ishkinin E., edited by m.d. Kyrgyz Republic Shmone, m.d., Prof. M.K. Alchinbaev-revision and additions. -Almaty, 2014. - 71 p. ISBN 978-601-80100-8-8

36. Early diagnosis of prostate cancer at the level of primary health care. Guidelines//ZhylkajdarovaA.,NurgaliyevN., Ishkinin E., edited by m.d. Kyrgyz Republic Author, revision and additions. -Almaty, 2014. -26 p. ISBN 978-601-80100-7-1

37. Ishkinin Y., Kim V., KossymbayevaY. Fractionation modes of radiation therapy for kidney cancer patients with bone metastasis//Irradiation and Oncology Journal of the ESTRO # 33, volIII supplement 1 april 2014, ISSN: 0167-8140 p 533 # EP-1372

The syllabus was developed in accordance with the working curriculum, discussed at the meeting of the Scientific Council of KazNIIOiR(Protocol №7from «August» 25, 2017).

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