

RADIOTHERAPY IN TURKEY

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According to the data collected from six main centers throughout the country 25,588 patients have been given radiotherapy in 2003.

Okmeydanı Hospital	10,051
Istanbul University	3,845
Ankara Oncology Hospital	4,704
Hacettepe University Hospital	3,273
September 9 University Hospital	1,619
Istanbul University Cerrahpaşa Faculty of Medicine	2,096

Comparing these values of 2003 with the data that could be obtained from the centers in 1998/99;

	<u>1999/99</u>	<u>2003</u>
Okmeydanı Hospital	7,180	10,051
Istanbul University	1,243	3,845
Ankara Oncology Hospital	3,058	4,704
Hacettepe University Hospital	1,472	3,273
September 9 University Hospital	673	1,619
Total	13,568	23,492

THE PROBLEMS OF RADIATION ONCOLOGY IN TURKEY

That Radiation Oncology became a department in 1980s in Turkey has been the start of an effective process of having a better profile, the number of qualified radiation oncologists has increased, technological equipment has attained a level that can compete with the world. The problems we face in this field are summarized below:

Concerning treatment and support equipment of radiation oncology, there are some difficulties in transferring new equipments into Turkey and high costs of updating in parallel to the fast development in computers and electronics , Being fully dependant on foreign technology in the sector of radiation oncology treatment, in which there exists no domestic production, brings about many problems. Because it is very hard to call for tenders and to maintain enough support on the right time during equipment purchasing, it can take years for a center to purchase equipment and to operate them.

Equipments of treatment and support are too expensive and this makes the hill of development in radiation oncology even steeper. There exist problems in importing the equipment produced abroad, and maintenance and transport of the accessories of the equipment requires a serious workload. It is necessary to have specialists in installation, calibration and usage of the equipment but many problems are faced in training the qualified staff. Most of the training courses are arranged abroad, so it is not possible to attain enough participation due to insufficiency of time and finance. Problems arise about maintenance agreements, the equipments are not maintained and delivered on the engaged time, and this causes in financial losses for both Turkey and radiation oncology departments, and delays in treatment of the patients.

It is impossible to follow the rapid changes in the radiotherapy sector parallel to the enormously developing technology, because the budget allocated for the health sector is not at the desired level. Therefore to upgrade the equipment instead of buying new ones seems as a more suitable way which is applied by most of the centers for a more qualified and safe treatment. But there also exist unwanted delays during these upgrades because of the dependence on foreign technology, high costs and the problems with the parties with which maintenance agreements have been signed .

Specialization Programs in Radiation Oncology takes place within university hospitals and state training and research hospitals. Radiation Oncology specialty program is branch a that requires continuous renewing and fast adaptation of new technologies. At this point, there occur several problems because of technical and physical insufficiency; the first of these problems is to put new technologies in use. Some differences, hard to be closed, may appear between the trainings of research assistants from different clinics in terms of using new technologies, adaptation to multidisciplinary study, brachytherapy, stereotaxy, conscious application of 3 dimensional conformal and density regulated treatments and gaining experience. Today education and

application of the mentioned practices in radiotherapy are limited to a few centers. There exist no mechanisms in order to standardize these differences and to provide every radiation oncologist with the introductory information about the actual therapy and application techniques. The research assistants in the universities and/or hospitals which have limited means/possibilities can not benefit enough from the centers which have better facilities and patient experience.

Although there are some studies and valid possibilities in order to support the attendance to national and international training courses and to establish scholarships for the radiation oncology research assistants having their specialist education, they are not at the desired level.

Lack of medical physicists who are experts in Radiation Oncology is being seriously important in operability of Radiation Oncology department. According to TAEK regulations it is mandatory to have a Postgraduate (Radiotherapy) Physics Engineer or a Medical Physics Expert during the certification of a radiotherapy center.

Developments in the modern medicine have generated a necessity for the experts from different branches of education to work together within a multidisciplinary concept for diagnosis and treatment of diseases. This subject becomes important especially in the field of radiotherapy which is one of the branches using very complicated tools producing radiation or including radioactive resources. According to the directives of EURATOM 97/43, the responsibilities of quality assurance and irradiation, with the inclusion of the patient dosimeter, development and usage of complicated methods and tools, optimization, verification of quality, is given to the Medical Physics Expert in order to provide the equipment to run free of error, to maintain the best diagnosis and treatment of patients and to have doctors and the other staff exposed less radiation. Another problem about this subject in Turkey is that although mentioned in the TAEK regulations, the cadre for such staff has not been defined by the Ministry of Health or by other authorized institutions,. Additionally, within the scope of harmonization to European Union acquis, it is required to define the profession of Medical Physics Expert by the law passed by Ministry of Health. EURATOM is the Atomic Energy Agency of European Union. Within the framework of adaptation to the European Union, TAEK (Turkish Atomic Energy Authority) has been authorized to adapt to the directives and the regulations of EURATOM. TAEK is a permanent member of IAEA, International

Atomic Energy Association. EURATOM also sets its directives in accordance with the IAEA recommendations.

Medical Physic Expert is a person that has graduated from physics, physics engineering or nuclear energy departments of the universities and has completed graduate work in medical physics. Medical Physics graduate programs covering both clinical and theoretical education in the literal sense, are given by the Hacettepe University Health Sciences Institute, Ankara University Nuclear Sciences Institute, Istanbul University Oncology Institute. Scarcity in the number of universities having Medical Physics postgraduate programs causes problems in terms of licensing radiotherapy center facilities, the number of which is increasing day by day, and providing the quality inspections of tools and treatments in the clinics. Since medical physics is rather intended to practical applications in clinic, this discipline's postgraduate program must involve training of practical applications of a fully equipped clinic as well as theoretical education. For that reason, a medical physics postgraduate program should include thesis.

Activities taking place in Radiation Oncology departments, which need more than one discipline acting in harmony, involves the stages of medical inspection of patient, and decision, simulation and application of the treatment. After the treatment decision is given, Medical Physician takes role in the planning stages of treatment applications intended to radiation therapy, performing the simulation and the treatment according to this, and periodic mechanical and dosimeter quality checking of the treatment planning system, simulation and treatment equipments for these operations to be done properly. Besides this, to ensure the radiation protection standards of the radiotherapy facility, and to give the needed instructions to the staff are involved within the job description of a medical physician. The share of the medical physicians, who in the entire process perform such important and demanding applications which require expertise in treatment of patients, within the income allocated to the staff in return for treatment is another problematic situation for Turkey when compared with the European and world standards.

The necessity of the existence of the medical physician in radiotherapy has also been manifested by laws. The necessity of the existence of medical physician in radiology and nuclear medicine, as the other applications of radiation, is not covered by laws. But like in the radiotherapy equipments, there are controls to be done for other equipments used in the radiology and nuclear medicine. Any defect in these equipments may endanger the protection of the staff against

radiation. Controls of the equipment can only be done by medical physicians who have been educated on this subject. In the countries which are in the European Union, medical physicians take part in radiology and nuclear medicine as well as in the field of radiotherapy. The obligation of existence of medical physicians in the sections using equipments producing radiation or radioactive resources should be manifested by law in Turkey during the adaptation process to European Union.

Theoretical and practical lectures of Radiation Oncology are quite few in the medical course. Theoretical lectures of radiation oncology in medical course of 6 years are much far less than the ideal. Clinical training courses, which can be mentioned as practical lectures, can only reach a very limited amount of students because of being selective and only 10% of the students can see a radiation therapy clinic before graduating from the faculty of medicine. For this reason, grate majority of the students graduated from faculty of medicine complete their education without having enough information on the principles of radiotherapy which is one of the main characteristics of cancer treatment.

Although established in many university and training hospitals, common meetings between disciplines (pathology, surgery, radiology oncologist, medical oncologist, radiologist, ext), as one of the main criteria of multidisciplinary approach, could not be organized in all hospitals.

The role of radiation oncology in the organ protection approach (especially head and throat cancers, anorectic cancers, genitounitary cancers, breast cancers, etc.) could not be elevated to the desired level of the developed countries. Radiotherapy indications are not known enough in clinical practices that are not oncology-intensive.

