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Review

Pattern of radiotherapy care in Bulgaria



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ABSTRACT

The paper reveals the changing pattern of Bulgarian Radiotherapy (RT) care after the successful implementation of 15 projects for 100 million euro under the European Regional Development Fund in Operational Programme for Regional Development 2007–2013.

The project enables a total one-step modernization of 14 Bulgarian RT Centres and creation of a new one. At the end of the Programme (mid 2015), 16 new Linacs and 2 modern cobalt machines will be available together with 11 virtual CT simulators, 5 CT simulators, 1 MRI and 1 PET CT for RT planning and all dosimetry facilities needed. Such a modernization has moved Bulgarian RT forward, with 2.7 MV units per one million of population (MV/mln.inh) in comparison with 0.9 MV/mln.inh in 2012. Guild of Bulgarian Radiotherapists includes 70 doctors, 46 physicists and 10 engineers, together with 118 RTTs and 114 nurses and they all have treated 16,447 patients in 2013. Major problems are inadequate reimbursement from the monopolistic Health Insurance Fund (900 euro for 3D conformal RT and 1500 euro for IMRT); fragmentation of RT care with 1–2 MV units per Centre; no payment for patient travel expenses; need for quick and profound education of 26% of doctors and 46% of physicists without RT license, along with continuous education for all others; and resource for 5000–9000 more patients to be treated yearly by RT in order to reach 45–50% from current service of 32%. After 15 years of struggle of RT experts, finally the pattern of Bulgarian RT care at 2014–2015 is approaching the level of modern European RT.

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1. History of Bulgarian Radiotherapy

Bulgarian Radiotherapy (RT) practice has a long history. It started early, at the beginning of the 20th century in 1906 at the Alexandrovska Hospital in Sofia. Institute of Radiology was founded in 1920, and National Cancer Centre was established in 1934. Medical Radiology Chair was initiated

in 1940 for undergraduate and postgraduate education in RT.¹

2. Cancer care organization

Since 1950 the structure of radiotherapy (RT) service has been integrated in Bulgarian Cancer Hospital Network. RT is offered

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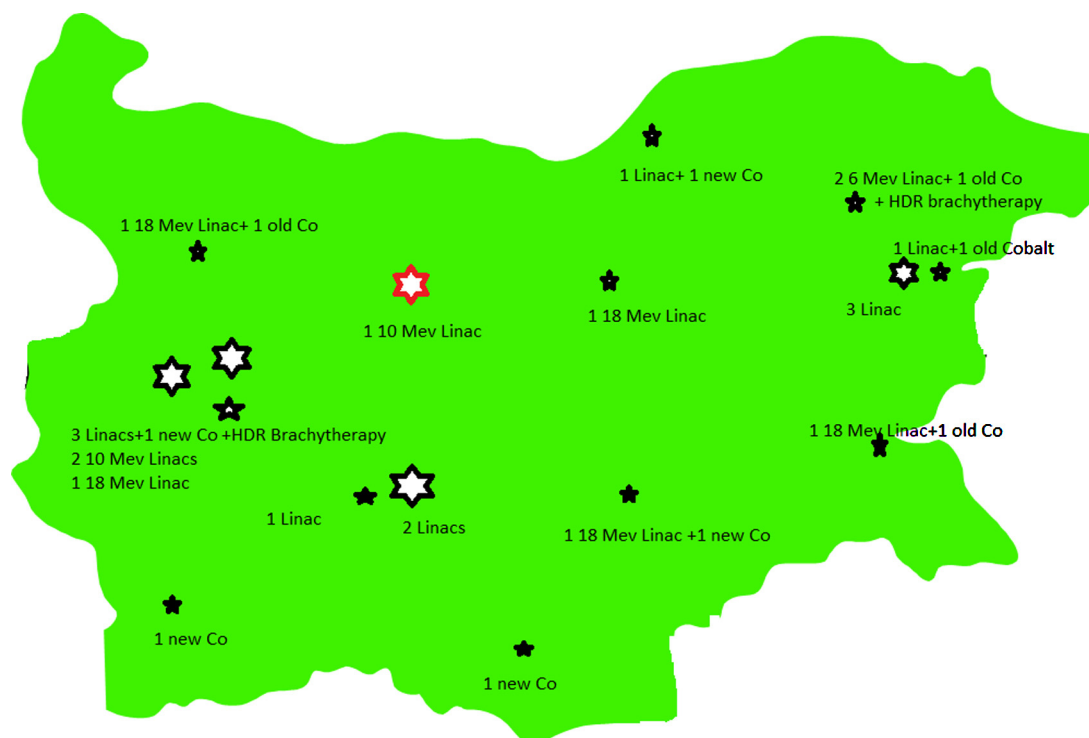


Fig. 1 – Map of RT Centres in Bulgarian Cancer Hospital Net. Big star – National RT Centre and 4 University RT Centres: Sofia, Plovdiv, Varna, Pleven; small star – 10 Regional RT Centres, part of Oncology Dispensaries – Varna, Rousse, Schoumen, Veliko Turnovo, Vratza, Plovdiv, St Zagora, Burgas, Haskovo, Blagoevgrad; MV, cobalt (Co) and brachytherapy units are shown.

nowadays in 16 radiotherapy departments, 15 already established and a new one that has recently started to treat patients. Each of the ten Radiotherapy Departments is a part of Regional Comprehensive Cancer Centre, a cancer hospital with good functional and organizational links called Dispensary (Fig. 1). In 1951, the National Centre of Oncology was founded with a Department of Radiotherapy in its structure. Four other University Radiotherapy Clinics in Sofia, Plovdiv, Pleven and the new one recently opened in Varna, are functioning within the University Multidisciplinary Hospital (Fig. 1). Only one RT department is private, set up in a private multimodality hospital Tokuda, part of a global chain of Japanese private hospitals.

3. Materials and methods

Every year a questionnaire was sent to every department to report its RT activity for the past year. Since 2000, the data have been summarized and presented by the President of the Guild at the regular Annual Meeting. Each report includes the number of patients treated yearly for major tumour sites, radiotherapy techniques used, outpatient and inpatient numbers, radical and palliative treatments, quantity and quality of the staff, reimbursement of different procedures, proposal for improvements, etc. These data have been available in the Guild database since the year 2000 and the recent information for 2013 is used in this paper.

4. Results and discussion

4.1. Spectrum of radiotherapy for different tumour sites

Bulgaria has a population of 7,304,632 registered for 2012 with a negative tendency of declining -0.78 .² A total of 36,649 new cancer cases were recorded in the National Cancer Register report for 2012 (the latest issue).² Radiotherapy treatment data for 2013 are shown in Table 1. Patients with major tumour sites are covered by radiotherapy care. Eighty percent of endometrial and uterine cervix cancers were treated by RT/1861 patients out of 2298 new cases (Around 70% of the new patients with breast cancer underwent adjuvant RT/2744 out of 3923 new cases). We still do not have resources to cover all cases having RT indication of the prostate, head and neck and some other cancers. RT pattern of care has been considerably changed with the installation of modern armamentarium. This has resulted in a 15% rise of treated cases, from 13,794 in 2012 to 16,447 in 2013 (Table 2). However, 43% of them (7063) were still irradiated on cobalt machines, mainly by 2D planning, and only 2 Centres have new cobalt facilities with 3D planning (Table 2). Only 26% (4325 patients) of all treatments are provided by 3D conformal RT or IMRT on the four Linacs available in 2013. This is a vast increase in comparison to 1285 patients, irradiated on just 2 Linacs available in 2009. Palliative RT has traditionally been delivered for many years

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