Improvement of Quality Assurance for Brachytherapy of Frequent Cancers in the Region (RAS/6/040)

Objectives

To improve the quality assurance (QA) and quality control (QC) of the radiotherapy programmes in recipient RCA Member States. Under this main objective, the project has three separate components: to improve brachytherapy treatment; to train radiotherapy technologists (RTTs); and to build the regional capability for radiotherapy equipment maintenance and repairs.

Background

The project will serve as an umbrella project for the three sub-programs, namely, i) improvement of QA for brachytherpay of frequent cancers in the region; ii) training of RTTs for improved patient care and iii) building the regional capability for equipment and repairs in the field of radiotherapy. The project activities will be implemented over a period of four years.

Improving QA

The number of cancer patients is increasing among developed and developing Member States. This disease has become a burden to national development. Cancers of the cervix, head and neck, breast, prostate and oesophagus are common malignancies in most of the RCA Member States and radiotherapy, including brachytherapy, is an essential treatment modality, especially when organ conservation and function preservation is required.

However, even those who are in early or curable stages suffer from recurrences because they cannot be treated optimally due to inadequate quality assurance programmes, and lack of expertise and facilities for brachytherapy. All these factors result in poor treatment outcomes leading to high morbidity and mortality and there is a need to address these problems to improve the quality of management of cancer patients.

Under the previous projects related to brachytheraphy, RAS/6/035 'LDR and HDR Brachytherapy in Treating Cervical Cancer (RCA)', and RAS/6/037, 'Quality Assurance for Treatment of Cervix Cancer by Radiotherapy', and partly under RAS/6/028, 'Nuclear Medicine Applications', the focus of the activities was on QA/QC of cervical cancer, specifically on the radiobiological, physical and clinical aspects of brachytherapy in the uterine cervical cancer, and on training medical physicists in proper treatment planning and the development/harmonization of treatment protocols. Here, the focus will be on the head, neck, breast and other types of cancer that require brachytherapy treatment.

Training Radiotherapy Technologists (RTTs)

This sub-programme will improve the quality of RTTs through training. Radiation therapy is an essential modality to treat cancer. For conducting radiation therapy, three types of professionals are required, namely, radiation oncologists, medical physicists and RTTs. RTTs administer radiotherapy treatment, and it is therefore essential that they be well trained to deliver high quality radiotherapy treatment.

National training courses will be conducted under the project for continuing professional development of RTTs based on the document published by the regional cooperative agreements AFRA and RCA in 2002, titled 'A Syllabus for the Education and Training of Radiation Therapists (RTTs)'. The project will also "train the trainers" to help establishment of local capacity for training programmes in respective national languages, if necessary.

Equipment Repair

There is a need in the region to build the capabilities for repair and maintenance of teletherapy and brachytherapy units, to ensure their proper operation and availability. Failures, which could be frequent, have to be rectified promptly and economically. Towards this end, the sub-programme is aimed at identifying equipment and instruments used in radiation oncology that require constant maintenance, estimating the cost of maintenance of these equipment, identifying existing sources of spare parts and minimizing the delay in repairing faulty equipment. This will also include identifying local resources available for production of spare parts and training of local human resources. The sub-programme envisages developing a comprehensive database about various requirements in the maintenance for radiation oncology equipment in the RCA region.

National Commitment

In the participating countries, there are an extensive number of ongoing national projects in relevant areas, including early cancer detection, improving treatment facilities, and training of personnel. Most of the participating countries have at least some brachytherapy equipment and are engaged in establishing QA/QC programmes.. Expert missions to the region to assess for QA needs for radiation oncology have been periodically supported through Japanese extrabudgetary contributions.

All participating counties have designated project counterparts and have agreed to provide facilities, human resources and local support for the implementation of national project activities. Some countries are also offering expert services as well as making their facilities available for training fellows or receiving visitors from the other Member States.

Outcomes

1. Number of professionals trained in brachytherapy treatment for common types of cancers in
the region increased.
2. Adequate quality assurance programmes for the clinical practice of brachytherapy established.
3. Harmonized protocols established for treating cancer.
4. An educational system meeting the criteria in the AFRA-RCA syllabus established for training
RTTs in better management of patients.
5. Capabilities regarding radiation oncology equipment repairs and preventive maintenance in the
RCA region assessed to identify the needs of the Member States.

Performance Indicators for Outcomes

1. At least 50 professionals trained in brachytherapy treatment for common types of cancers in the region before the completion of the project.

2. Establishment of adequate QA/QC programmes in at least one cancer treatment centre in 8 participating countries before the completion of the project; verified through experts reports.

3. Publication of harmonized protocols on brachytherapy treatment before the completion of the project.

4a. Establishment of an educational system based on RCA–AFRA syllabus in at least five participating Member States before the completion of the project; verified through experts reports.

4b. Training of at least 50 RTTs on management of patients, before the end of the project, verified through the reports of training courses conducted.

5. Establishment of a database on needs and capabilities in the RCA region for repairs and preventive maintenance of radiation oncology equipment before the completion of the project.

Expected Project Impact

The project is expected to result in improved healthcare and management of patients with cancer of the cervix, head and neck, breast and oesophagus; improved quality of radiation therapy among Member States; and improved capability of repair and maintenance of radiation oncology equipment.