

Editorial – Educational

The National Oncology Center at King Hamad University Hospital

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The modern treatment of a patient with cancer requires great expertise, adequate resources and a multi-disciplinary approach. Much of this approach is derived from the experience of multicenter controlled trials and the focused experience of specialist cancer centers. The experience of institutions such as Memorial Sloan Kettering Cancer Center in New York, Institute Gustave Roussy in Paris and many more has been to the forefront in clinical trials of newer approaches and the introduction of better care. This has developed pari-pasu with significant strides in research and these centers of excellence have improved our understanding of the genetics of cancer and targeted therapy. The degree of specialization within these and other modern cancer centers is such that entire teams are devoted to the management of the patient with specific diseases such as a breast service or a hepatobiliary service etc. This level of specialization is now accepted as the norm and allows the development of unique skills and expertise.

Bahrain Med Bull 2018; 40(4): 205 - 206

Current survival equates with early detection and appropriate treatment; the majority of patients can rightly expect prolonged survival and cure. Refinements in therapy have provided more tailored and specific treatments that are both effective and better tolerated with fewer lasting side-effects. Combination modalities, such as targeted therapy, hormonal therapy, immunomodulation and stem cell therapy, radiotherapy improvements and bone marrow transplantation have provided hope for the patient with what 50 years ago was often a fatal condition. Among the many milestones on the path to cure has been the recognition that surgical treatment alone is not curative for the majority of patients.

Neoadjuvant and adjuvant therapies are often essential to render a formerly inoperable tumor resectable or deal with the potential of metastatic disease after resection. This attitude was perhaps more accepted initially by pediatric oncologists and surgeons where multidisciplinary tumor boards were and remain the gold standard of care; it is now a vital part of the management of adult cancer patients. Every patient with a malignant condition should be discussed at a tumor board to arrive at the best possible consensus of management.

Until recently, it was unfortunately the reality, that sophisticated cancer treatments according to the international guidelines were not available in the Kingdom of Bahrain. Patients in need of bone marrow transplants, stereotactic radiosurgery for the early stage tumors and oligometastasis or stereotactic

body radiation therapy needed to be referred abroad. This puts additional emotional and logistic burden on the patients and also create negative perceptions towards the organization and technological status of cancer care in the society.

It is against this background and an awareness that about 400-800 new cases of cancer are seen each year in Bahrain, therefore, King Hamad University Hospital (KHUH) will formally open its new Oncology Center early in 2019. Already the center is treating patients with all forms of cancer, including solid tumors and leukemia. The center marks an insightful development on the island and is the culmination of many years of planning and development. It is the center's ambition that the majority of patients with cancer in the Kingdom will be afforded excellent care in their own country and that treatment abroad will be rarely required.

Although we face the present and future of cancer care with optimism, we also accept that therapy can fail and patients may succumb to the disease. It is important that dying patients remain symptom-free and that they pass on with dignity as far as possible and to be free of pain or debilitating symptoms. In as much as resources are focused on curing cancer, equal emphasis is placed on the palliation of symptoms should treatment fail.

The most important aspect of any oncology service is the level of expertise and compassion of its staff. The Oncology

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Center at KHUH has gone to significant lengths to provide such experts and caring services. This has included not only the appointment of experienced physicians and nurses, but also an interim contract with Hacettepe University Hospital in Turkey, a center renowned internationally for its research into oncological disease and the high level of care it provides. This center possesses internationally recognized physicians and is home to 2 Nobel Laureates. Engagement with Hacettepe University Hospital began some three years ago in advance of the completion of the center and clinical activity when Bahraini doctors and nurses completed a structured oncology training course there. Several of its internationally renowned doctors are helping KHUH establish its National Oncology Center providing the unique expertise in medical oncology, hematology and bone marrow transplant program.

The oncology building itself is architecturally stunning with a well-designed interior and boasts an array of state of the art equipment and technology for chemotherapy, radiation therapy and bone marrow transplantation services. Cutting-edge equipments were installed in the areas of the diagnostic imaging with the latest generation CT, MRI and PET-CT scanners for the diagnosis and follow-up of oncology patients, enabling most precise visualization of the tumor mass and its spread. In the radiation therapy section, treatment of malignancies of the breast, head and neck and pelvis as a part of the multidisciplinary approach is performed on two latest generation linear accelerators with multiple energies of photon and electron beams under the image-guidance for the precise targeting and elimination of the tumor cells. In order to provide most effective treatment for the gynecologic cancers, a special form of the radiation therapy with targeted delivery of the radioactive source in the vicinity of the disease (high-dose-rate brachytherapy) was recently introduced.

The preparation of the bone marrow transplant unit goes according to the international standards; several dedicated areas including cell processing laboratory were specifically allocated in the Oncology Center to provide up-to-date hematology services. It can accommodate over 140 patients to receive

care in last generation radiotherapy and multimodality imaging departments, bone marrow transplantation services, theatres, outpatients, wards and Intensive Care Units. In addition, the center will provide a pediatric and palliative care service. Great thought has been given to make treatment in the unit efficient, pleasant and comfortable.

Moving towards the opening date, it is worth mentioning several unique treatment options which previously were not available for the Bahraini patients. One of them is accelerated partial breast irradiation (APBI), for the early stage patients treated with the breast conservation therapy. In this treatment approach, the radiation would be delivered directly to the area of the lumpectomy cavity either with temporary placement of the radioactive source in a flexible catheter or intraoperatively. Such technique allows to shorten the radiation treatment time from four weeks with daily visits up to 5 to 10 days and also known for excellent cosmetic outcome.

The other important modality which will be available is the stereotactic radiosurgery, where small tumors, metastasis or functional disorders can be locally treated with extremely high doses resulting in the ablation of the tumor on the linear accelerator equipped with robotic treatment couch and advanced soft tissue visualization systems. In case of the elderly patients with non-small cell lung cancer if surgery is contraindicated, the use of the PET-CT and respiratory gating enables fractionated stereotactic body radiotherapy as a promising treatment option.

At this time, the unit has begun to treat all forms of malignancy and has initiated a National Tumor Board where physicians from all over Bahrain are able to discuss the management of their cancer patients. There are dedicated physicians and nurses and specific teams to look after specific diseases such as the breast service.

We look to a bright future for this new and fledgling service which will hopefully be a great resource to the people of Bahrain and a source of national pride.