

Requirements and Implementation of lung SBRT program in developing countries : Benefit of International cooperation MDACC & KHCC as an Example

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BACKGROUND: Lung cancer is the most common cancer in adults in Jordan. Although most cases of non-small cell lung cancer (NSCLC) used to be diagnosed with stage III or IV, recently more stage I-II tumors were diagnosed either incidentally or by performing CT chest for high risk individuals. As Stereotactic body radiotherapy (SBRT) is a definitive local treatment option for patients with stage I & II, who are not surgical candidates and for patients who refuse surgery, there was a high need to obtain this technique and implement it at King Hussein Cancer Center , being the only comprehensive cancer center in Jordan .The purpose of this study was to assess the impact of networking with advanced oncology centers worldwide and the establishment of a special task force to prepare for the implementation of SBRT at our center.

HYPOTHESIS: To introduce a high tech radiotherapy procedure in a developing country like Jordan with limited resources needs a collaboration with advanced oncology center with adequate experience in implementation of such technique.

METHODS: We reviewed our experience with the introduction of SBRT technique to our center in collaboration with international cancer centers like MD Anderson Cancer Center (MDACC), USA Furthermore, we highlighted the critical role of a specialized multidisciplinary team in the successful implementation of this procedure especially in a developing country. This review represents a detailed report addressing the practical steps for successfully establishing SBRT in a developing country, including linac and treatment planning commissioning, implementation of 4D/CT & PET/CT procedures, Planning and Delivery steps like PTV, dose schemes and planning process, Patient specific QA & Image-based guided delivery

RESULTS: SBRT for treatment of early NSCLC was successfully implemented at our center four years ago. Integration with an advanced cancer centers is crucial for the correct transfer of this complex technology. Successful initiation and implementation of lung SBRT in a developing country could be performed with the help of international cooperation and multi-institutional agreements .