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workflows. The implementation of RT-Flow reduced greatly the conventional and ConWIP (no patient appointment) finalization was reduced by respectively 0.7 and 0.9 days for treating breast cancers with radiotherapy?

What is the cost of reducing cardiac morbidities when breast radiotherapy. Deep inspiratory breath hold (DIBH) is one method for reducing the heart dose, however, it is resource intensive. This study analyses the cost of cardiac sparing using DIBH and its associated benefits.

Purpose or Objective: There is no threshold limit for radiation induced cardiac toxicity, making it especially relevant for cardiac sparing radiation delivery in adjuvant breast radiotherapy. Deep inspiratory breath hold (DIBH) technique is one method for reducing the heart dose, however, it is resource intensive. This study analyses the cost of cardiac sparing using DIBH and its associated benefits.

Material and Methods: DIBH technique using Varian RPM, was used to deliver radiotherapy for 50 consecutive patients of left sided breast cancer. The time required in minutes and the number of personnel involved during each stage of the planning and the treatment (40 Gy in 15 fractions) were recorded. Weighted person hours (WPH) for each step were calculated and all the steps were summed up to arrive at the WPH for each patient. Radiographers, medical physicists and radiation oncologists were given a weightage of 1, 2 and respectively for calculating the WPH. The data was analysed to see if experience reduces the time required. We also calculated the average WPH required for reducing the heart dose by 1 Gy.

Results: The mean age was 51 years. 14 patients were known hypertensive on medications while none of them were known ischemic heart disease patients. Three were suffering from COPD. Twenty nine patients had breast conservation surgery while the remaining 21 patients underwent mastectomy. The mean WPH was 21.49 for the entire cohort. The average mean heart dose (MHD) in the free breathing (FB) technique was 380.96cGy and 160.61cGy in the DIBH technique (p =0.002). Average WPH required for the DIBH planning process was 13.09 and 8.39 for delivery. Patients were divided into 2 cohorts, of 20 and 30 respectively, to assess if practice the time required reduces with experience. On an average 10.25 WPH is required to reduce the MHD by 1 Gy, while the remaining 21 patients underwent mastectomy. The time required in minutes and the number of personnel involved during each stage of the planning and the treatment (40 Gy in 15 fractions) were recorded. Weighted person hours (WPH) for each step were calculated and all the steps were summed up to arrive at the WPH for each patient. Radiographers, medical physicists and radiation oncologists were given a weightage of 1, 2 and respectively for calculating the WPH. The data was analysed to see if experience reduces the time required. We also calculated the average WPH required for reducing the heart dose by 1 Gy.

Conclusion: The online software Radiotherap-e provided a common platform to share clinical, radiological and radiotherapist informations and allowed standardization and optimization of contouring strategies within a regional oncological network.

EP-1457

Delineation of radiation treatment volumes: a regional network based on the software Radiotherap-e

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Purpose or Objective: To demonstrate the feasibility of a CBCT-based on-site simulation, planning, and delivery (OSPD) for whole brain radiotherapy, in which all steps from imaging, planning to treatment delivery are performed at the treatment unit in one appointment time slot. This work serves as the proof of concept for future OSPD single fraction radiation therapy.