Purpose/Objective: Conformal radiotherapy involves irradiation of large volume of normal tissue with low and medium doses, which biological relevance is not clear yet. Here we aimed to compare effects associated with local body irradiation during treatment of two differently located solid tumors: head and neck cancer (HNC) and prostate cancer (PC).

Materials and Methods: Here we compared effects associated with local body irradiation during RT of two solid tumors: head & neck cancer (HNC) and prostate cancer (PC). About 120 HNC and 120 PC patients were enrolled into the study. All patients were subjected to radical IMRT with maximum GTV doses in the range 50-73.8 Gy and 74-76 Gy, respectively. Acute mucosal toxicity and gastrointestinal/genitourinary toxicity was assessed. Three consecutive blood samples were collected before, during and after RT. The endogenous serum peptidome was profiled using MALDI mass spectrometry. Furthermore, serum proteins were analyzed using label-free LC-MS/MS ‘shotgun’ approach in complete sets of samples representing 20 patients from each cancer group.

Results: In case of HNC patients radiation-induced changes in serum peptidome accumulated constantly during the treatment and their highest level was detected soon after the end of RT (~60% of components changed their abundance at significance level p<0.0001 between pre- and post-exposure samples). Moreover, changes in serum peptidome correlated significantly with intensity of acute mucosal reactions and volume of normal tissue irradiated with low-to-medium doses. In contrast, in case of PC patients majority of radiation-induced changes were detected 2-3 weeks after start of RT and their extend was less significant (~30% of components changed their abundance at significance level p<0.05). Furthermore, correlations between changes in serum peptidome and escalation of radiation toxicity or volume of tissues irradiated at low/medium doses were not detected. About 200 serum proteins were identified and quantified: ~10% and ~2% of identified proteins changed their abundance between pre- and post-exposure samples from HNC and PC patients, respectively.

Conclusions: The effects of local irradiation were documented at the level of serum peptidome, which is an apparent indicator of the patient’s whole body response. Significant differences were noted between patients irradiated because of HNC and PC in spite of the fact that similar volumes of tissues were irradiated with similar doses in both groups. This observation presumably reflected differences in radiosensitivity and corresponding early radiation toxicity in normal tissues/organs adjacent to cancer target and exposed to low-to-medium doses during IMRT.

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The impact of an adult radiation late effects clinic on breast cancer survivorship
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Purpose/Objective: Radiotherapy is a key modality within the multidisciplinary management of breast cancer. A late effect (LE) following radiotherapy for breast cancer may occur many months or years afterwards, present significant management issues and adversely impact quality of life. To identify the LE prevalence, management and potential needs in breast survivorship an audit was performed of the patients referred to the Adult Radiation Late Effects Clinic at a tertiary care centre.

Materials and Methods: Following institutional research ethics board approval, a retrospective review of a prospective radiation late effects research database was undertaken. Data regarding patient demographics, staging, clinical variables (surgery, systemic and radiotherapy), type and onset of late effect, LE management interventions, adverse events, and LE outcomes were abstracted. Descriptive and summary statistics, including range and percentage, were used in analyzing the patient characteristics and outcomes using SPSS 22.

Results: From 02/2003 to 12/2012, 117 women were referred for LE consultation. Mean age at the time of LE referral was 59 y (33-78) with 60 L, 46 R and 1 L and R and 20 in-situ and 97 invasive cancers. Mean BSA was 1.75 (1.37-2.22) with 12 smokers and 30 ex-smokers. T stage was: 20 Tis, 55 T1, 42
A Dutch nationwide survivorship care programme for (non-)Hodgkin lymphoma survivors


Purpose/Objective: Survivors of Hodgkin lymphoma (HL) and subgroups of non-Hodgkin lymphoma (NHL) are at increased risk of various late adverse effects of radiotherapy and chemotherapy, leading to substantial excess morbidity and mortality. The need for long-term follow-up is increasingly recognized. Long-term follow-up care programmes have been established for childhood cancer survivors, but not yet for (N)HL survivors. Therefore, the Dutch BETER consortium (Better care after Hodgkin lymphoma: Evaluation of long-term Treatment Effects and screening Recommendations) has developed a nationwide infrastructure for survivorship care clinics for survivors of HL and subgroups of non-Hodgkin lymphoma (diffuse large B-cell lymphoma). The consortium aims to: (1) establish evidence-based follow-up guidelines for (N)HL survivors; (2) identify and trace survivors eligible for follow-up care; (3) educate survivors about possible late adverse effects of treatment; and (4) provide risk-based care and advice regarding prevention.

Materials and Methods: Follow-up guidelines were developed according to international standards. The guideline development group consisted of clinicians, methodological experts and patient representatives. We developed guidelines for second malignancies, cardiovascular disease, thyroid disease and osteoporosis after premature menopause. Recommendations are given for fertility care and family planning, therapy for neck muscle weakness, and infection prophylaxis for functional asplenia.

Results: We are currently identifying and tracing a cohort of approximately 8,500 HL survivors and 3,000 NHL survivors in 22 hospitals throughout the Netherlands, including all radiotherapy centres. Eligible patients for follow-up care survived for ≥5 years and were treated at ages 15-70 years from 1970 onwards. Survivors are identified through the Netherlands Cancer Registry, the nationwide pathology registry and hospital-based registries. Tracing of current addresses of survivors is done through the nationwide Netherlands Personal Records Database. For all survivors, treatment data are collected from medical records to provide risk-based screening recommendations. The website www.beternahodgkin.nl was developed to inform and educate survivors about late effects. Currently, a survivorship care plan is being developed. A nationwide database, including screening and adverse events data, is being developed to evaluate the follow-up guidelines for diagnostic value and efficacy.

Conclusions: We expect that the BETER project will improve healthy life expectancy and quality of life for (N)HL survivors. Evaluation of follow-up care will lead to improved knowledge regarding the diagnostic value and efficacy of the...