GTV differentially impacts locoregional control of non-small cell lung cancer (NSCLC) after different fractionation schedules: subgroup analysis of the prospective randomized CHARTWEL trial.

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PURPOSE: To evaluate the impact of fractionation schedule on the size of the gross tumour volume (GTV) effect on tumour control after radiotherapy of NSCLC.

Continuous Hyperfractionated Accelerated RadioTherapy – Escalated Dose (CHART-ED): A Phase I study

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Purpose/Objective: Patients who present with locally advanced inoperable non-small cell lung cancer (NSCLC) may be suitable for radical radiotherapy.

Continuous Hyperfractionated Accelerated Radiotherapy (CHART) for NSCLC: experience from nine UK centres

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Purpose/Objective

In 1997 Saunders et al showed improved local control and survival for the CHART fractionation (54 Gy in 36 fractions over 12 days) over conventional radiotherapy (60 Gy in 30 fractions over 6 weeks) in a randomised, multicentre trial. Since 1997 CHART has been a recommended standard of care in the UK and Din et al (2008) published CHART outcomes from 1998 to 2003 across five UK centres. We have now updated that audit and report CHART outcomes collected from 9 UK centres between 2003 and 2009.

Materials and Methods

We carried out a retrospective analysis of 826 patients from 9 UK centres who underwent CHART between 2003 and 2009. A Standard data collection proforma was used to collate demographic, treatment and outcome data from the centres. Statistical analysis was performed using SPSS, variables governing survival were analysed using Log rank test. Toxicity was recorded using the RTOG common toxicity criteria.

Results

We analysed 826 patients with a median age of 71 years (range 40-90), 62% of whom were male. Tumour stages 1, 2 and 3-4 were 39.6%, 14.5%, and 42.9% respectively with 3% unrecorded. The WHO performance status was 0/1 and 2/3 in 66% and 9% respectively with 25% unrecorded. 21% received prior chemotherapy, in stage III disease this was 42%. 99% received the prescribed treatment with a response rate of 63% recorded. 57% experienced radiotherapy related toxicity however in only 3% was this graded 3 or higher. Median overall survival (OS) from diagnosis was 22.6 months; 2 and 3 year overall survivals were 43% and 23.6% respectively. Variables governing survival were analysed and statistically significant favourable prognostic features were non-squamous histology (p=0.02) and tumour response to CHART (p<0.001) but not age, performance status, prior chemotherapy or stage.

Conclusions

This audit demonstrates that the reported survival rates for patients with localised NSCLC treated with the CHART radiotherapy fractionation continue to be reproduced in routine clinical practice and confirms CHART has an acceptable toxicity profile.

The use of Statistical Process Control (SPC) to monitor processes

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Over the past few years, due to the development of new radiotherapy equipments and complex techniques such as IMRT, IGRT and IMAT, the amount of quality controls (QC) required to check the equipment performance and the patient-specific treatment plans has increased and could be a barrier to the development of these techniques.
Application of statistical process control (SPC) to patient-specific VMAT quality assurance
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Purpose/Objective: Due to the complexity of VMAT treatments, patient-specific QA by means of pre-treatment dosimetric verification is considered mandatory.

Risk of second primary lung cancer in women after radiotherapy for breast cancer; a DBCG based dose-response study
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Purpose/Objective: Several epidemiological studies have reported increased risks of second lung cancers after radiotherapy among breast cancer patients.

How to write a successful grant application
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The ability to write successful grant applications is a skill that is becoming ever more important.

Intensity modulated radiation therapy in sinonasal sarcoma: dosimetry and clinical outcome
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Purpose/Objective: This study is aimed to assess the dosimetry and clinical outcome in patients of sinonasal sarcoma undergoing intensity modulated radiation therapy (IMRT) as part of cancer treatment.

Implementing PRISMA-RT to analyze digitally reported (near) incidents and classify them for benchmarking
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Purpose/Objective: Since March 2012, the National Government for Health started the PRISMA-RT(Prevention and Recovery Information System for Monitoring and Analysis in RadioTherapy) program to improve the processes and patient safety within the radiation oncology departments.

MEDRAPET: Radiologists and radiation protection: Education, training and CPD
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As the final outcome of the MEDRAPET project, the guidance document shall give specific learning outcomes for each professional group, reflecting its need for education and training in radiation protection.