

In this issue

In this issue, I take the opportunity to announce the winners of the best paper and best reviewer awards for Volume 11 and acknowledge the reviewers who have contributed to the review process for articles published during 2012.

My thanks go to Rex Cheung who presents a guest editorial entitled: It is time to integrate MRI deformable registration into image-guided radiotherapy and margin analysis: using prostate cancer radiotherapy as a model?

There is a range of topics presented in this issue and in the first article, Chaudhari, Reynolds and Higgins evaluate the effect of block margin on small fields when point dose prescription (ICRU) or isodose line prescription (RTOG) formats are used. Eleven clinical SBRT cases, one 4-field prostate case and two phantom cases using 0, 0.5 or 1 cm block margins were analyzed. Integral dose and target coverage was compared using dose–volume histograms and calculated isodose volumes for either isodose line prescription (100% Rx dose to 95% planning target volume [PTV]) or isocentre point prescription (100% Rx dose to the isocentre). Their results confirm for small targets the ICRU point prescription method can produce comparable PTV coverage to the isodose line prescription method with less dose heterogeneity and comparable integral dose. Reduction of hot spots in potentially normal tissue and reporting clarity makes this internationally recommended prescription standard preferable.

In the second article, Oates et al., undertake a study to obtain an estimate of dietary fibre and fluid intake in Australian men undergoing prostate radiotherapy and to establish feasibility and patient compliance with recording normal diet without intervention during the radical course of radiotherapy. Eleven participants were enrolled and treated with 74–78 Gray (Gy) to the prostate over 8 weeks. Participants were instructed to record a diary of their food and fluid intake and

bowel motions for the duration of treatment. The diet diaries were assessed for compliance by analysing the number of days over the treatment period and the number of diary pages submitted and also analysed for nutrient intake of fibre and fluids. The authors concluded that it is feasible for patients to record a diet diary over a radical course of prostate radiotherapy.

The next article will be of interest to service managers, Wineke A.M. van Lent et al., develop an indicator set for managers and evaluated its use in an international benchmark of radiotherapy centres. The indicator set assessed the efficiency, patient-centredness and timeliness of the services delivered.

Literature produced a list of 81 indicators, from stakeholder feedback, 33 indicators were selected and evaluated in the benchmark. Six negatively evaluated indicators were adapted; together with eight positively evaluated indicators 14 indicators seemed feasible. Examples of indicators concerned utilisation, waiting times, patient satisfaction and risk analysis. This study provides a pragmatic indicator development process for international benchmarks on operations management. The presented indicators showed to be feasible for use in international benchmarking of radiotherapy centres. The pilot identified attainable performance levels and provided leads for improvements management.

The topic of the next paper is related to complimentary medicine. Jenny Salmon undertakes an evaluation of an acupuncture service in oncology. Current evidence suggests that acupuncture may provide some palliation of the symptoms and side effects of cancer and its treatments. Therefore, consideration of the potential benefit of the introduction of an acupuncture service in oncology in Cornwall was investigated. This study describes the experience of patients using the service. Between April 2005 and October 2007, 107 oncology

patients experiencing one or more of the following symptoms: nausea, vomiting, hot flushes, pain, breathlessness, dry mouth, anxiety, depression, fatigue, diarrhoea, constipation or difficulties in coping were referred for up to 10 weekly acupuncture treatments. Of them, 103 had acupuncture treatment. This observational study utilised responses to questionnaires and self assessment of symptoms at the start (baseline), on completion of treatment and at 2 months after acupuncture treatment. The results of this study demonstrate that acupuncture may benefit patients experiencing anxiety and or fatigue associated with cancer.

In the next paper, Matthiesen et al., review the role of radiotherapy for large and locally advanced non-melanoma skin cancer. In this report, they review their institutional experience with patients treated with radiation therapy for T2–T4 NMSC and analyze outcomes. Seventy patients and 85 lesions were reviewed who received radiotherapy.

Fifty-six lesions (65.9%) were untreated, 17 (20.0%) recurrent, and 12 (14.1%) post-operative. Forty-three (50.6%) were staged T2, 20 (23.5%) T3, and 22 (25.9%) T4. Median follow-up was 20 months. They conclude that radiotherapy for T2–T4 NMSC is effective. Basal cell histology and T2 are statistically favoured to achieve complete response to radiotherapy alone.

In the final article, Kewar et al., review the changes in radiobiological parameters in ¹³¹Cs permanent prostate implants. In prostate

permanent implants using ¹³¹Cs seeds, the prostatic oedema developed during the implantation procedure, increases the separation between the seeds. This leads to a decrease in the prostate coverage and thus causes an oedema-induced dose reduction, which results in an increase in tumour cell surviving fraction (SF) with a corresponding decrease in tumour control probability (TCP). To investigate the impact of oedema on the SF and the TCP, the expression of the SF of the linear quadratic model was extended to account for the effects of oedema using the exponential nature of oedema resolution and the dose delivered to the oedematous prostate. The SF and the TCP for oedematous prostate implants were calculated for 31 patients who underwent real time ¹³¹Cs permanent seed implantation. The presented model in this study can be used to estimate the SF or the TCP for pre-plan or real-time permanent prostate implants using day 0 post implant CT images.

To complete this issue, Antony Palmer presents a technical note on the impact of software changes: Transit dose and source position accuracy of the Eckert & Ziegler BEBIG GmbH MultiSource® high dose rate (HDR) brachytherapy treatment unit. This work demonstrates the need for comprehensive medical device system checks following software changes. Technical improvements in HDR device performance have been achieved with the new software; reducing transit doses, improving transit dose correction, and improving source positioning accuracy.

Professor Angela Duxbury