

In this issue

Striving for radiation treatment accuracy is a common theme in the five original articles presented in this issue. This is highlighted by researchers who continue to identify better methods of radiation dosimetry and dose delivery to the patient. Topics include the evaluation of immobilisation devices for intra-thoracic radiation therapy, the dosimetric comparisons between 3D conformal therapy and intensity modulated therapy for prostate cancer, hippocampus avoidance in the treatment of base of skull tumours, the effects on the testis of treatment to rectal tumours and consent issues for patients with dementia. To complete this issue there is a literature review on the factors associated with the late presentation of cancer and a short case report on the management of extensive squamous cell carcinoma on the site of radiation induced dermatitis with severe fibrosis.

In the first paper by O'Shea *et al.*, from St Luke's Hospital in Dublin, the authors undertake the first prospective randomised-controlled lung immobilisation trial, using 3-DCRT, to determine the optimal of three immobilisation devices for lung radiotherapy in terms of set-up reproducibility, patient comfort, radiation therapist's satisfaction and cost-effectiveness. The authors present their findings of 30 patients receiving intra-thoracic radiation therapy, randomised to one of three immobilisation techniques; the results do suggest an optimal device.

In the second article, Buckey *et al.*, from the University of Texas Health Science Center at San Antonio, set out to assess the validity of the purported benefits of IMRT. To do this they undertake a dosimetric comparison between 3D conformal radiation therapy and intensity modulated radiation therapy, using

treatment plans produced for 10 patients to be treated for prostate cancer. The results presented support an interesting conclusion.

In the next article, Wiebe *et al.*, based in departments in London, Ontario and Switzerland, highlight the issues around late radiation toxicity and that treatment of the radiosensitive neurogenic stem cells that reside in the hippocampi, suggesting that avoidance of the hippocampi may be an important strategy to reduce potential radiation-related cognitive effects. Six patients treated for base of skull tumours were re-planned using co-planar helical fan beam arc therapy (tomotherapy) and coplanar and non-coplanar volumetric arc techniques (Rapid Arc). The results of this study suggest that hippocampus avoidance can be achieved.

The subject of the fourth article is a study to compare radiation dose to testis when the pelvis is irradiated for rectal cancer. The authors, Ameri *et al.*, from the Shaheed Beheshti University of Medical Science in Tehran, undertake a comparison using radiation produced from a Cobalt 60 source and a linear accelerator. This study recruited 28 rectal cancer patients who were randomly assigned to receive radiotherapy from the difference sources. Serum sex hormone levels were measured before and 3–6 weeks after irradiation and testes absorption doses were measured three times during whole course of irradiation in nine patients.

In the final article, Joan Mowbray and Helen Mowbray consider the needs of adult patients who require radiotherapy, who also have a diagnosis of dementia. The authors describe what is meant by the term dementia and how this affects individuals and the potential to have an impact on ensuring that individuals can give informed consent to treatment. Given that

patients may have to attend for many visits for treatment, obtaining informed consent may prove to be a challenge in patients with dementia because of the memory impairment and the nature of the information. The authors explore and detail processes that are successful in ensuring patients with dementia can understand information about treatment, the benefit and risks of treatment and the availability of any other reasonable alternatives to the proposed treatment or procedure. This paper describes the most effective approaches and considers these in obtaining informed consent.

The next article is a literature review on the factors associated with the late presentation of cancer. The authors, Almuammar, Dryden and Burr from the University of Sheffield, explore

the evidence base to identify the key reasons associated with a delay in diagnosis, these include factors/reasons for patient delays and those associated with health care provider delays, such as referral delay from general practitioners.

To complete this issue, Patel, Rashid and Nguyen, from the University of Texas and MD Anderson Cancer Centre, UT-Houston, present a case study and detail the management of a patient who had developed multiple squamous cell carcinomas, severe radiation fibrosis and limited neck mobility after chemoradiation for a squamous cell carcinoma of the tonsil.

Professor Angela Duxbury