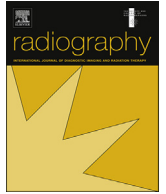




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A national survey of current practices of preparation and management of radical prostate radiotherapy patients during treatment[☆]

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ABSTRACT

Aims: Radiotherapy is an important radical treatment for prostate cancer patients with services continually evolving. This survey aims to gain an insight into the variation of radiotherapy practices in the UK, focussing on pre-treatment preparations, on-treatment review and management of radical prostate cancer patients undergoing radiotherapy. To our knowledge this is the first survey reported focussing on prostate radiotherapy practices with responses from a mix of health professionals.

Materials and methods: A national survey was designed based on current known practices in supportive care and management of prostate cancer patients. The survey was distributed to lead radiotherapy personnel in radiotherapy services across the UK with a 77% response rate (n = 54).

Results: Pre-treatment protocols were mandated in the majority of departments. Use of bladder filling (98%) and bowel emptying (66%) were frequently deployed. Bowel preparation varied between use of laxatives (13%) or enemas (41%) to achieve consistency.

On-treatment reviews were carried out by a mix of health professionals; most commonly shared between oncologists and radiographers (20%). Radiographers reviewing patients were independent prescribers in 22% of departments.

Toxicity grading tools were not used by almost half of departments (47%) either at baseline and/or on-treatment reviews. Written information about follow-up was given to patients towards the end of their radiotherapy; however, fewer departments included the length of hormone duration (13%).

Conclusion: This survey has demonstrated variations in practice exist across the UK. These variations suggest that important questions about the best methods for treatment accuracy and patient management need to be established through further research.

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Introduction

Radiotherapy accounts for a significant proportion of treatment for prostate cancer patients in the UK, with The National Institute for Health and Care Excellence (NICE) guidelines reporting in 2014 that 35% of all prostate cancer patients underwent external beam radiotherapy ± hormone therapy.¹

Although quality can be difficult to define in radiotherapy practices,² some reports discussing potential barriers/improvements in quality, recognise that implementation and access of

state-of-the-art technologies such as IMRT/VMAT are important.^{3,4} Whilst the benefits (e.g. potential reduction of side effects) of technologies like this have been well documented for prostate cancer radiotherapy,^{5–7} effective internal immobilisation is critical and often overlooked in the high technology environment of radiotherapy.⁸ For example, inconsistent bladder and bowel filling can impede prostate gland stability^{9–12} which can result in biochemical recurrence in prostate cancer.¹³ Unfortunately, however, the evidence-base is unable to provide sufficient information to establish the best way to achieve such practices (e.g. for bowel preparation)¹⁰ and may be a factor in variations and quality in practice. Hence, identifying such variations in practice is therefore a prerequisite for enhancing the quality of radical prostate radiotherapy.

Further measures of quality in prostate cancer radiotherapy should include the supportive care patients receive. The Department of Health's Improving outcomes: A strategy for cancer,

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recognise that there are variations in patients' experience of care and services should reflect what's important to patients.¹⁴ Independent Cancer Taskforce's newly published cancer strategy for England (2015–2020),¹⁵ which, sitting under its six strategic priorities, calls for patients to have access to a Clinical Nurse Specialist (CNS) or other key worker to help coordinate care.¹⁶ Therapy radiographers are recognised as being able to deliver co-ordinated care, particularly in the advent of fewer clinical nurse specialists for prostate patients compared to other sites such as breast cancer patients.¹⁶ Indeed key areas identified for Therapy radiographers to undertake included on-treatment review clinics, information giving, clinical assessment of side effects as well as holistic support.^{16,17} An awareness of the support available to prostate cancer patients currently across the UK can help identify the limitations some services have and where further investment may be required to ensure the highest quality care for patients.

Similar on-going work by the National Prostate Cancer Audit team (NPCA) is looking at the care men receive after a diagnosis of prostate cancer.¹⁸ This work includes some radiotherapy aspects such as technical radiotherapy delivery (IMRT) and whether clinical nurse specialist (CNS) support is available to patients however does not explore other departmental practices. Therefore the survey presented here considers areas within prostate cancer radiotherapy where best practice guidance may not exist. The findings can give professionals involved in prostate cancer care, a better understanding of how patients with prostate cancer are looked after in radiotherapy and allow reflective practice, which is essential for professional development.¹⁹

Methods

Sample selection

There are 58 NHS radiotherapy services including satellite centres across England.²⁰ By including private centres and the rest of Ireland, there were 71. Of the 71 centres, we successfully contacted 70. The survey was sent via email to all 70 departments where contacts could be found for an oncologist, review radiographer or radiotherapy department manager. 54 out of 70 (77%) departments responded.

All UK radiotherapy departments/satellite centres (defined as those where external beam radiotherapy is undertaken via either NHS or private enterprises) were included. The NHS standard contract for radiotherapy 2013/2014 states there are 58 radiotherapy services across England,³ including private centres and the rest of the UK. At the time point when this survey was administered, we found there to be a total of 71 centres as a consequence of new centres opening since this publication.

Survey distribution

The survey was sent via email to each department in May 2014 where contacts could be found for an oncologist, review radiographer or radiotherapy department manager.

Confirmation of receipt of the survey was assessed by confirmation of emails. To increase potential response rates a survey reminder was sent to departments 2–3 weeks after the initial contact. Each department was allowed to submit only one response.

Survey formation

The survey was commissioned by Prostate Cancer UK²¹ as part of their health and social care professionals programme which funds health professionals with the aim of delivering better care for men.

The survey was just one part of a wider project awarded to The Christie NHS foundation trust aimed at improving the local service for patients. A literature review was undertaken to scope current evidence regarding pre-treatment preparations, on-treatment reviews and grading and management of toxicities for radical prostate cancer patients undergoing radiotherapy. The authors then developed the survey questions based on clinical evidence and current practices within radiotherapy. The survey was peer reviewed by local Consultant Oncologists specialising in uro-oncology. The questions were split into 'pre-treatment preparations and management', 'on-treatment reviews' and 'grading and management of acute toxicities during prostate radiotherapy'. All questions included "other" as an option to allow for expansion or clarification of answers. It also allowed further themes of data to emerge that were not included in formulated answers. Local research and development approval was sought before distribution. A limitation to the survey was that question 10 and 11 did not fit into the main themes for analysis around preparation and management of patients. These questions were aimed at technical aspects of radiotherapy services which is outside the scope of this paper and therefore have been excluded from this article. The full survey questions can be found in [Appendix 1](#).

Results

Demographic data

Of the 70 contactable departments, 54 responded (77%). Responses by professional group were Radiographers (73%) Oncologists (20%), Nurses (7%). A third of radiographers who responded were classed as advanced/specialists in urology. More commonly, radiographers were information and support or review radiographers that dealt with other cancer sites.

Pre-treatment preparations and management

Departments reported their pre-treatment preparations aimed at ensuring reproducible CT planning scans. Fifty three departments stated using a bladder filling protocol one department stated they did use a protocol but didn't state which. A comfortably full bladder was deployed 92.5% of the time ($n = 54$) whereas an empty bladder was specified in the remaining 7.5%. Bowel preparations were used in 64% of departments who responded ($n = 54$) with either use of enemas alone (41%) or laxatives alone (13%); however, some departments used a combination (13%). The duration of bowel preparations varied. 33% stated they would continue with enemas or laxatives for the duration of the treatment, 24% would continue until the side-effects changed management. Two departments would give them only as required post scan. One department said they gave enemas for the scan only and one department specifically stated after 10 fractions the enemas are stopped. Another department introduced a more individualised patient approach based on whether they were having IGRT with reduced margins or pelvic lymph nodes treated. Supplementary diet and lifestyle information given is summarised in [Table 1](#). Management of bowel and bladder preparations extended further to on-treatment with methods such as giving patients the same time appointment each day to ensure consistency (30%) and getting patients off the bed who presenting with gas in the bowel (59%).

On-treatment reviews

All prostate cancer patients undergoing radiotherapy were reviewed during treatment. The most common review protocol involved a mix of professionals 56% ($n = 54$).

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