

Late effects of prostatic radiotherapy – incidence and correlation with lifestyle factors.



Professor Robert Thomas
Macmillan Consultant Oncologist Bedford and Addenbrooke's Hospitals
Visiting professor Cranfield University
The Primrose Unit
Bedford Hospital, Bedford, Mk42 9 DJ

Introduction and Background

Radiotherapy to the pelvis can cause late side effects which can have considerable impact on patients' activities of daily living. The incidence of side effects is generally obtained from clinical trials such as the RT01 and CHIPP but these data are from selected patients, generally receiving superior radiotherapy. The true incidence of side effect may be different in a real population of patients who may still have been treated with radical intent but may not have been eligible for the studies due to co-morbidities or stage of disease.

Furthermore, there are very little data on the influence of lifestyle on the incidence of radiotherapy side effects. This audit evaluates an entire population of patients who have received radiotherapy ensuring the true incidence of side effects, albeit from a single institution. This data will help to management decision regarding radical treatment options for future patients but help advise the potential benefits or risks of daily lifestyle and self help strategies during and after radiotherapy.

Aims of this audit:

- Determine the late pelvic side effects following radiotherapy for prostate cancer
- To determine whether lifestyle factors (smoking, exercise and BMI) influence late side effects

Audit methodology:

A questionnaire (see below) was designed with guidance from the National Cancer Survivorship Pelvic Cancer group. It combined the validated Vaisey (rectal toxicity) questionnaire; the NCI symptom check list for urinary symptoms and erectile function; an estimate of physical using the General Practitioner Physical activity questionnaire; and an ad hoc question concerning smoking habits.

The Addenbrooke's Radiotherapy Department data base identified all men receiving radical radiotherapy for prostate cancer from July 2004 – July 2010. This generated an audit cohort over 6 years of men who had completed radiotherapy at least 6 months prior to the data collection. Questionnaires will be given to patients during their routine follow up appointment or sent to them by post with a stamped addressed envelope.

Data collection:

The paper records will be kept at the Primrose Oncology Unit. As well as the information from the questionnaire the audit team will collect from the case notes the age at presentation, radiotherapy dose, tumour grade, PSA at presentation and time of survey. If the patient has relapsed or died and the cause of death. The final anonymised data will be entered into a Macmillan electronic survey programme and an excel spreadsheet. In the following variable fields:

Vaizey score	0	1-6	7-12	13-18	19-24
NCI Rectal bleeding score	0	1	2	3	
GPPAQ (during Rxt)	inactive	mod inactive	mod active	active	
GPPAQ (now)	inactive	mod inactive	mod active	active	
Smoker (during Rxt)	no	<5/day	≥ 5/day		
Smoker (now)	no	<5/day	≥ 5/day		
NCI nocturia score	0	1	2	3	
NCI incontinence score	0	1	2	3	4
Erectile function	0	1	2	3	
Age at time of survey	< 70 yrs	≥70 yrs			
Alive	yes	no			
Death due to prostate cancer	yes	no			
PSA relapse	yes	no			
BMI [weight(kg)/height²]	<18.5	18.5-24.9	25-29.9	>30	

Patient numbers: Approximately 500 patients will be evaluated.

Presentation of data: A table will display the average toxicity for each of the criteria. In addition the toxicity will be displayed separately for smokers; non-smokers; within the four exercise categories; age <70 yrs or ≥70yrs; within the four BMI categories.

Statistical evaluation: A statistical comparison will be made comparing the incidence of side effects between the smokers; non-smokers; within the 4 exercise categories and BMI categories.

Time frame of the audit:

Data collection: To be completed by 31st January 2011
 Statistical evaluation: To be completed by 28th February 2011
 Completed record: To be completed by 31st March 2011

Prostate Radiotherapy Symptom Checklist

It would be very useful if you could fill in this questionnaire which gives a measure of your symptoms. Please try to remember the last 4 weeks. (Please put an X in the appropriate box)

Bowel control*	Never	Rarely	Sometimes	Weekly	Daily
How often are you incontinent for solid stool?	0	1	2	3	4
How often are you incontinent of liquid stool?	0	1	2	3	4
How often are you incontinent for gas?	0	1	2	3	4
How often does incontinence alter your life style?	0	1	2	3	4

* (Never = no episodes; Rarely = 1 episode in the last 4 weeks; Sometimes = more than 1 episode in the last 4 weeks but less than weekly; Weekly= 1 or more episodes a week but not more than 1 per day, Daily = 1 or more episodes per day).

Bowel control	Yes	No
Do you need to wear a pad or a plug?	0	2
Do you need to take constipating medicines?	0	2
Can you defer defecation for 15 minutes?	0	4

Rectal bleeding	Please put a cross in the box
None	0
Occasional (no treatment required)	1
Moderate (Simple outpatient treatment given)	2
Severe requiring blood transfusion)	3

Water works – How many times do you typically urinate at night	
0-1	0
2-3	1
4-5	2
Greater than 6	3

Water works – Incontinence	
None	0
None but sense of urgency and need to rush to the toilet	1
Occasional if coughing, lifting, sneezing or laughing	2
Frequent – requiring use of pads	3
Incontinent - Requiring catheterisation	4

Erectile Function	
Able to get normal erections	0
Impaired restored to normal with medication (e.g. viagra)	1
Impaired but not helped with medication or not tried	2
Absent	3

Prostate Radiotherapy Lifestyle Checklist

A. During your radiotherapy: Remembering the time during your radiotherapy.

Pleased mark box with a X

Smoking	YES	NO
Did you smoke during your radiotherapy?		
If yes - less than 5 a day?		
If yes – greater than 5 a day?		

Physical activity at work	Please put a cross in the box below
Was not employed at the time (including retired)	
Spent most of the time sitting at work	
Spent most of the time standing or walking at work but the work did not require intense activity	
Work involved periods of definite physical activity – lifting heavy objects and use of tools	
Work involves vigorous physical activity including handling of very heavy objects	

Physical activity out side work	None	Some but <1 hr per week	1 – 3 hrs a week	> 3 hrs a week
Physical activity such as swimming, jogging, gym, aerobics, tennis etc				
Cycling including cycling to work or pleasure				
Walking, including walking to work or pleasure				
Housework / Childcare				
Gardening / DIY				

Your walking pace	Please put a cross in the box below
Slow pace < 3 miles / hour	
Stead average pace	
Brisk pace	
Fast pace > 4 miles / hour	

B. Current activities: Remembering the last 4 weeks

Pleased mark box with a X		
Smoking	YES	NO
Do you smoke now?		
If yes - less than 5 a day?		
If yes – greater than 5 a day?		

Physical activity at work	Please put a cross in the box below
Am not employed (including retired)	
Spend most of the time sitting at work	
Spend most of the time standing or walking at work but the work did not require intense activity	
Work involved periods of definite physical activity – lifting heavy objects and use of tools	
Work involves vigorous physical activity including handling of very heavy objects	

Physical activity out side work	None	Some but <1 hr per week	1 – 3 hrs a week	> 3 hrs a week
Physical activity such as swimming, jogging, gym, aerobics, tennis etc				
Cycling including cycling to work or pleasure				
Walking, including walking to work or pleasure				
Housework / Childcare				
Gardening / DIY				

Your typical walking pace now	Please put a cross in the box below
Slow pace < 3 miles / hour	
Stead average pace	
Brisk pace	
Fast pace > 4 miles / hour	

Thank you very much for your time