Palliative Radiotherapy Utilisation within a Palliative Care Unit¹

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Introduction

Palliative radiotherapy (RT) has been demonstrated to be efficacious for symptom management in advanced malignancy² however concerns have been raised about it’s appropriateness in deteriorating or dying patients³.

Many of the symptom and clinical issues that arise in advanced cancer are shared across radiation oncology and palliative care, however limited data are available investigating the use of radiotherapy for inpatient palliative care patients.

Given the lack of available evidence, vulnerability of this patient cohort and the potential for both benefits and harms, the question of RT utilisation within the Barwon Health Palliative Care Unit (PCU) was raised.

Aim

The aim of the current project was therefore to evaluate the how, why, where, and when of palliative RT utilisation amongst patients admitted to a regional PCU.

Materials and Methods

A retrospective cohort study was undertaken. All patients admitted to the Barwon Health PCU between August 2011 and June 2016 who underwent RT during their admission were included.

A range of clinico-demographic and RT specific variables were collected.

Opioid consumption was recorded (where available) for those patients who received RT specifically for pain. Mean total opioid use was calculated for the week to RT and then for each subsequent week post-radiotherapy.

Demographic data were analysed descriptively. Wilcoxon Signed Rank Tests were used to compare opioid consumption before and after RT at time points one week, two weeks and three weeks. A Kaplan-Meier curve showing survival following commencement of RT was plotted.

The project was approved by the Barwon Health Research Ethics, Governance & Integrity Unit (Barwon Health reference 16/190).

Results

Sixty episodes of RT were provided to 51 patients during the study period with 54 admissions included in the final analysis. This equated to approximately three per-cent of all PCU admissions during the study period.

Table 1 demonstrates the clinico-demographic characteristics of the 54 PCU admissions. Table 2 shows that pain management was the commonest reason for RT treatment and the thoraco-lumbar and pelvis were the most commonly irradiated sites.

When RT was used for the specific indication of pain management single fractions were used 68% of the time.

Age	Mean (SD) Median (IQR) Range	66 (14) 67 (21) 29-86
Gender	Female Male	22 (41%) 32 (59%)
Place of residence prior to PCU admission	Home with carer Home alone Hospital RACF	30 (56%) 7 (13%) 16 (30%) 1 (2%)
Primary language	English Other [†]	52 (96%) 2 (4%)
Diagnosis	Lung Prostate Skin (including melanoma) Urological Breast Colorectal Unknown primary Other [†]	15 (28%) 10 (19%) 5 (9%) 5 (9%) 4 (7%) 3 (6%) 3 (6%) 9 (17%)
Metastatic disease		52 (96%)
Palliative care phase on admission	Stable Unstable Deteriorating Not recorded	2 (4%) 30 (56%) 12 (22%) 10 (19%)
Primary reason for PCU admission	Symptom Management End of life Care	53 (98%) 1 (2%)
AKPS [‡] on admission	Range Mean (SD) Median (IQR) Not recorded	40-80 56 (11) 55 (10) 12 (22%)
Receiving radiotherapy on admission		16 (30%)
Principal reason for radiotherapy	Pain control Disease control Spinal cord compression/cauda equina syndrome Symptom control [†] (excluding pain)	38 (70%) 8 (15%) 4 (7%) 4 (7%)
Radiotherapy course	Single Fraction Multi-Fraction Single site Multiple sites	18 (33%) 36 (67%) 38 (70%) 16 (30%)
Radiotherapy sites treated by episodes (some episodes involved ≥ 1 site)	Thoracic spine Lumbar spine Pelvis/sacrum Chest wall/ribs/lung Lower Limb Brain Skull Cervical spine Upper Limb Other [†]	15 13 11 10 8 5 3 3 3 10
Concurrent corticosteroids prescribed		47 (87%)
Radiotherapy course completed		47 (87%)

Table 2. Radiotherapy variables

Outcomes

Outcome of PCU admissions	Death Home Transfer to acute hospital RACF	26 (48%) 24 (44%) 3 (6%) 1 (2%)
Length of stay (days)	Range Mean (SD) Median (IQR)	3-169 28 (26) 23 (20)
Time between commencement of radiotherapy and death (days)	Range Mean (SD) Median (IQR)	1-316 65 (75) 36 (54)
Deaths ≤ 14 days of radiotherapy commencement		11 (20%)
Deaths ≤ 30 days of radiotherapy commencement		23 (43%)

As shown above the commonest discharge outcome was death with 20% and 43% of patients dying within 14 and 30 days of RT respectively.

Median survival in the current study was 36 days

Conclusions

A small proportion of all patients admitted to PCU received RT

Almost half of all patients died during their admission and the median survival post-radiotherapy was 36 days. This is in keeping with a previous study performed in a Saudi Arabian PCU⁴ however is four times longer than the median survival time for all patients who die in the Barwon Health PCU.

Response rates to RT were lower than have been previously reported for all-comers. This likely reflects, at least in part, issues with using opioid consumption as a marker of response. Attempts were made to also analyse pain scores as a further marker of RT efficacy however this was not possible due to considerable variability in pain assessment within the PCU.

This projects highlights that ongoing research is required to optimise the stratification of palliative care inpatients to RT.

²Seminars in oncology 2014;41(6):751-763

³CA Cancer J Clin 2014;64(5):295-310

⁴J Support Oncol 2013;11(2):82-5