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Curative external beam radiotherapy in patients over 80 years of age with localized prostate cancer: A retrospective rare cancer network study

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Contents

Abstract

Purpose: To analyse tolerance and outcome of patients over 80 years of age who choose external beam radiation therapy to the prostate as a curative treatment.

Methods and material: We evaluated acute and late side effects, biological DFS (bDFS) and actuarial survival as well as causes of death in relation to the clinical status including co-morbidity, PSA value, Gleason score and modalities of external radiotherapy in patients with localised prostate cancer >80 years of age.

Results: From January 1990 to December 2000, 65 eligible cases (median age: 81) were treated by 12 different participating institutions in the Rare Cancer Network. Tumour stage was T1N0M0, T2N0M0 and T3N0M0 for 10, 40, and 15 patients, respectively. Median follow-up was 65 months (range 22–177). Five-year overall survival rate was 77% with a 5-year bDFS rate of 73%. The incidence of grade 3 early toxicity was 12% and 9% for urinary and digestive tract, respectively.

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Conclusions: Radiation therapy given with curative intent is well tolerated in this selected group of patients aged over 80 years with localised prostate cancer. Results in terms of survival do not suggest a deleterious impact of this treatment. Therefore the authors recommend that radiation therapy with curative intent should not be withheld in selected elderly patients with localised prostate cancer.

Keywords: Prostate cancer; Elderly; Radiotherapy; Side effects; Curative treatment

1. Introduction

Rapid population ageing in most areas of the developed world is among the causes of a significant increase in the cancer burden of the elderly. When attention is focused on people over 75 years of age, prostate cancer (PC) becomes the most common tumour diagnosed in males in Europe and North America with more than 44,000 incident cases occurring in the European Union per year in the 2000 [1]. However the appropriate management of elderly patients diagnosed with a localized PC remains controversial. Most urologists consider that benefits of aggressive treatment are greatly reduced since complication rates increased in older men. However, for the case of radiotherapy, several retrospective studies have shown that patient age did not independently influence gastrointestinal or urinary toxicity after radiotherapy either for PC or for other pelvic malignancies [2–6]. The aim of the present study was to report on patients who were both diagnosed a PC in their 1980s and treated using curative radiotherapy. In this cohort of elderly patients age 80 and greater, the impact of high dose external radiation therapy was analysed in terms of toxicity and survival.

2. Patients and methods

Information was collected through the database of 12 departments of Radiation Oncology affiliated to the Rare Cancer Network. Between January 1990 and December 2000, 65 patients aged 80 or older were treated with definitive, potentially curative radiation therapy. The median patient age was 81 years (range: 80–89). The indication for curative radiotherapy was considered in accordance with local policies and guidelines, taking into account the decision of the patient. Exclusion criteria included presence of distant metastases, locally advanced disease (bladder and/or rectal involvement) and co-morbidity conditions likely to lead to an extremely high risk of death. The study was conducted in accordance with guidelines of the participating institutions research ethics boards or institutional review boards.

Forty-one (63%), 21 (32%) and 3 (5%) patients had a WHO performance score of 0, 1 and 2 respectively. Fifty percent of patients had co-morbidities requiring permanent medication: 39 patients had only one co-morbidity, 14 patients had 2 and 1 patient had 3 significant co-morbidities. Cardiovascular disease (30%), diabetes (5%) and pulmonary disease (4%) were the most common illnesses observed in the series. Co-morbidities were objectively measured using an instrument described by Greenfield et al. [7] adapted by Fouad et al. [8]. An index of disease severity (IDS) ranging from 0 (absence of co-morbid condition) to 4 (very serious condition carrying to high risk of mortality) was assigned for each individual and for each co-morbid condition. According to data obtained from the medical records, the IDS was scored 0, 1, 2 and 3 for 11 (17%), 18 (27%), 34(52%) and 2 (4%) patients, respectively.

Previous cancer was noted in 12 patients (minimal "other cancer" free survival: 5 years, median follow-up: 7 years). The previous cancer types observed were skin cancers, colonic cancers and laryngeal cancer in 8, 3 and 1 cases, respectively. First clinical signs leading to diagnosis of PC were typically frequency and/or hematuria but DRE and PSA levels revealed PC in 8 and 27 patients, respectively. All patients had histopathological confirmation of adenocarcinoma. Gleason score was obtained in all tissue specimens except two. At the onset of radiotherapy, all 65 patients were free of distant metastases as assessed by CT scan and chest radiography. Bone scintigraphy was not routinely performed. No patients in the current series had a pelvic lymphadenectomy. Eighteen patients (28%) received neoadjuvant hormonal treatment and 6 had adjuvant androgen deprivation therapy (9%) of at least 6 months duration. Hormonal therapy was indicated according to local policy (generally T3 stages and/or Gleason > 7). For those who started androgen blockade before radiotherapy, the mean duration of treatment was 6 months. The patients who received systematic hormonal treatment after radiotherapy were treated indefinitely until relapse or death. All patients were irradiated using a >10 MV photon beam. Thirteen patients were treated with four opposed fields (box technique) and the 52 others with a three-dimensional (3D) conformal radiotherapy. Twenty-seven patients received pelvic irradiation to a dose of at least 45 Gy (41%). The 27 patients whose pelvis was irradiated had at least one of the following criteria: Gleason > 7, T2b or T3 stages, pre-treatment PSA > 10 ng/ml. Not all the patients fulfilling these criteria had their pelvis treated considering their heavy co morbidity. The prostate alone was the clinical target volume for the remaining 38 patients. The mean total dose to the prostate was 69.5 Gy (range 60–78) delivered in 35 fractions according to ICRU 62.

During radiotherapy, acute toxicity was evaluated weekly by a physician and retrospectively scored according to the Common Toxicity Criteria version 2.0. Follow-up visits were scheduled according to each centre policy, but at least two