Urologic Oncology: Seminars and Original Investigations 32 (2014) 637–644

UROLOGIC ONCOLOGY

Original article

Examining the management of muscle-invasive bladder cancer by medical oncologists in the United States[1]

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Received 21 November 2013; accepted 23 December 2013

Abstract

Background: Neoadjuvant chemotherapy (NACT) for the treatment of muscle-invasive bladder cancer (MIBC) remains underutilized in the United States despite evidence supporting its use.

Objectives: To examine the perioperative chemotherapy management of patients with MIBC by medical oncologists (MedOncs) to move toward standardization of practice

Participants and methods: A 26-question survey was emailed to 92 MedOncs belonging to the Bladder Cancer Advocacy Network or the American Society of Clinical Oncology for completion from May to October 2011

Results: A total of 83 MedOncs completed the survey: 52% were based in academic centers. Most referrals were from urologists (79%). NACT for treatment of MIBC and high-grade upper-tract urothelial carcinoma is offered by 80% and 46% of respondents, respectively. Adjuvant chemotherapy for treatment of MIBC and upper-tract urothelial carcinoma is offered by 46% and 42% of respondents, respectively. NACT was not offered by 49%, 29%, and 35% of respondents if Eastern Cooperative Oncology Group performance status was 3 or greater, if patients had T2 lesions without lymphovascular invasion, and if the glomerular filtration rate was <50 ml/min, respectively. Chemotherapy regimens included gemcitabine/cisplatin (90%), methotrexate/vinblastine/adriamycin/cisplatin (30%), dose-dense methotrexate, vinblastine, adriamycin, and cisplatin (20%), and gemcitabine/carboplatin (37%).

Conclusions: Most MedOncs (79%) in this survey offer perioperative chemotherapy to all patients with MIBC. This increased use of NACT is higher than previously reported, suggesting an increase in the adoption of recommendations that follow best evidence.

Keywords: Adjuvant chemotherapy; Medical oncologist; Muscle-invasive bladder cancer; Neoadjuvant chemotherapy; Survey

[1] Funding source: The US Office of Management and Budget (0925-0046).

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http://dx.doi.org/10.1016/j.urolonc.2013.12.012
1078-1439

1. Introduction

In the United States (US), more than 70,000 patients in 2013 presented with bladder cancer and more than 15,000 died of metastatic disease [1,2]. Approximately 20% to 25% of patients have muscle-invasive bladder cancer (MIBC), which has a high rate of disease progression, because ~50% harbor micrometastatic disease that is not detectable by conventional imaging. Therefore, although patients undergo radical cystectomy, half of the patients relapse and die of metastatic disease. MIBC is potentially curable, but often fatal without effective treatment strategies. Optimal management of MIBC mandates a multidisciplinary approach with coordination of care between radiologists, pathologists, urologists, medical oncologists (MedOncs), and in some cases radiation oncologists for staging, multimodality treatment, and follow-ups.

Although radical cystectomy alone may lead to a durable cure in MIBC, the high rate of tumor recurrence suggests that early institution of systemic therapy is necessary to improve overall survival (OS) [3,4]. In MIBC, neoadjuvant chemotherapy (NACT) administered with definitive local therapy has been extensively evaluated in the hopes of improving OS. The long-term results of the international, multicenter, phase III European Organisation for Research and Treatment of Cancer (EORTC)/Medical Research Council trial that randomized 976 patients to receive 3 cycles of neoadjuvant cisplatin, methotrexate, and vinblastine or no NACT showed an absolute survival benefit of 5% and a relative reduction in the risk of death of 16% at 10 years [5]. The randomized Southwest Oncology Group (SWOG) 8710 trial also showed the median survival to be 77 months in patients with MIBC receiving neoadjuvant methotrexate/vinblastine/adriamycin/cisplatin (MVAC) followed by radical cystectomy, compared with 46 months for patients having radical cystectomy alone; a benefit in median survival from NACT of 2.5 years [6]. A meta-analysis of 3,005 patients with MIBC who received cisplatin-based NACT, including patients in the EORTC/Medical Research Council and SWOG studies, confirmed an absolute survival benefit of 5% and a 14% risk reduction in mortality at 5 years [7].

Given the level 1 evidence of a survival benefit conferred by cisplatin-based NACT, it would be expected that the use of NACT for the treatment of MIBC would be widely implemented by urologists and MedOncs. The National Comprehensive Cancer Network (NCCN) guidelines strongly support the use of cisplatin-based combination NACT for the treatment of MIBC with category 1 evidence. However, multiple retrospective studies (before 2003) using the Surveillance, Epidemiology and End Results–Medicare database or the National Cancer Database report a low use of perioperative chemotherapy (11%–12%), with NACT used in <2% of patients with MIBC [8,9]. A report documented a higher use in patients having lesions of higher T categories [10]. Unfortunately, even when NACT was given, cisplatin was usually not included. Although, practice patterns may take years to change after level 1 data have been reported, it appears that evidence-based practice change is not occurring in MIBC. A report of patients with MIBC managed at 15 institutions between 2003 and 2008 found that only 34% received perioperative chemotherapy, of which 14% was NACT and only 11% was cisplatin based [11]. A review of 17,330 cases from the Italian National Cancer Database (2003–2007) found that only 9% had received NACT for the treatment of MIBC before undergoing radical cystectomy [12]. Although there was a modest increase in NACT use from 6% in 2003 to 13% in 2007, these reports highlight the consistent underutilization of NACT for the treatment of MIBC.

The primary goal of this study was to understand the practice patterns of both academic and community MedOncs treating MIBC in the United States, including the frequency of use and type of NACT and adjuvant chemotherapy (ACT) administered, the diagnostic studies performed, and posttreatment follow-up.

2. Participants and methods

2.1. Survey

This study was approved by the US Office of Management and Budget (0925-0046). To ensure a mix of experiences and perspectives, participants were from both larger academic medical centers and smaller community-based practices. An electronic 26-question, secure, non-identifiable link to a web-based survey was emailed to 92 MedOncs belonging to the Bladder Cancer Advocacy Network or the American Society of Clinical Oncology and was also posted on the "US Oncology Portal" from May to October 2011. The US Oncology Portal is part of the I Know Med electronic medical record shared by more than 2,000 community oncologists in the US Oncology network.

Patient treatment patterns were analyzed based on type of clinical practice, referral information, type of primary tumor (bladder cancer vs. upper-tract urothelial carcinoma [UTUC], stage, age, renal function, and performance status [PS]). These data were cross-tabulated with treatment and management strategies, including frequency of use, type and dose of NACT and ACT, and imaging and diagnostic studies (computed tomography [CT] of the abdomen and pelvis, CT of the chest, ultrasound, technetium-99m bone scan, chest radiograph, magnetic resonance imaging, positron emission tomography (PET) scan, and urine cytology) at baseline and on follow-up.

The operating settings for the web survey were set up to accept only a single response (i.e., 1 survey) from 1 computer. The only identifiable information collected was the Internet Protocol address. Participants were not provided with consent forms. However, the following language was