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Intravesical chemotherapy use after radical nephroureterectomy: A national survey of urologic oncologists

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Abstract

To determine the use of prophylactic intravesical chemotherapy (pIVC) following radical nephroureterectomy (RNU) and barriers to utilization in a survey study of urologic oncologists.

Methods: A survey instrument was constructed, which queried respondents on professional experience, practice environment, pIVC use, and reasons for not recommending pIVC when applicable. The survey was electronically distributed to members of the Society of Urologic Oncology over an 8-week period. Survey software was used for analysis.

Results: The survey response rate was 22% (158 of 722). Half of the respondents were in practice for ≤10 years, while 90% performed ≤10 RNU cases annually. Of the 144 urologists regularly performing RNU, only 51% reported administering pIVC, including 22 exclusively in patients with a prior history of bladder cancer. One-third administered pIVC intraoperatively, whereas the remainder instilled pIVC at ≤3 (7%), 4 to 7 (37%), 8 to 14 (20%), and >14 (3%) days postoperatively. Almost all urologists noted giving a single instillation of pIVC. Agents included mitomycin-C (88%), thiotepa (7%), doxorubicin (3%), epirubicin (1%), and BCG (1%). Among respondents who did not administer pIVC, the most common reasons cited included lack of data supporting use (44%), personal preference (19%), and office infrastructure (17%).

Conclusion: Only 51% of urologic oncologists report using pIVC in patients undergoing RNU. Reasons underlying this underutilization are multifactorial, thereby underscoring the need for continued dissemination of existing data and additional studies to support its benefits. Moreover, improving the logistics of pIVC administration may help to increase utilization rates.

Keywords: Upper-tract urothelial carcinoma (UTUC); Mitomycin-C (MMC); Bladder cancer; Practice patterns

1. Introduction

Upper-tract urothelial carcinoma (UTUC) is an uncommon genitourinary malignancy, comprising 7% of renal tumors and 5% to 10% of all urothelial cancers [1]. Radical nephroureterectomy (RNU) is the gold standard management for bulky, invasive, or high-grade UTUC [2]. Subsequent urothelial recurrence in the bladder, however, has been reported to occur in 20% to 50% of patients following RNU [3–6]. Further research into both surgical and adjuvant medical therapies aimed to decrease intravesical recurrences can reduce the burden of treatment and economic costs associated with long-term bladder cancer surveillance and management.

Within the surgical armamentarium, it is clear that early clipping of the ureter distal to an index UTUC tumor reduces downstream seeding and intravesical recurrences. Beyond this key technical point, other modifications including intravesical vs. extravesical vs. endoscopic management of the intramural tunnel, all have comparative outcomes provided adherence to sound oncologic principles [7,8].

Perhaps more intriguing and promising for altering the natural history of bladder recurrences is the use of adjuvant perioperative therapies. In that regard, recent prospective randomized trials have reported that the instillation of prophylactic intravesical chemotherapy (pIVC) at the time of or following RNU can reduce the likelihood of de novo

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bladder cancer recurrence. For example, in the ODMIT-C Trial, researchers found an 11% absolute risk reduction following the administration of a single postoperative dose of mitomycin-C (MMC) [9]. An additional prospective study originating from Asia noted similar observations with a single intravesical dose of pirarubicin decreasing bladder tumor recurrence from 42% to 17% in patients with a minimum 2 years of follow-up [10]. Furthermore, an extended dosing series using either epirubicin or MMC has been demonstrated in retrospective series to delay intravesical recurrence and therefore improve recurrence-free survival after RNU [11].

Despite the excellent safety profile of pIVC use in this setting [12], official guideline recommendations and a standardized administration protocol are still lacking. To date, only the European Association of Urology has issued a position statement (assigning a Grade B recommendation) for the administration of a single postoperative dose of pIVC after RNU [13]. Therefore, the purpose of our study was to determine the use of pIVC following RNU and identify potential barriers to utilization that may be addressed in future studies to promote standardization in urologic oncology practices.

2. Methods

A survey tool (Fig. 1) was created using a commercially available online distributor (SurveyMonkey.com). An electronic link to the survey was sent via e-mail to the members of the Society of Urologic Oncology (SUO; $n = 722$). Submissions were accepted over a consecutive 8-week period (July 2014 to September 2014). Survey responses were voluntary. Incentives were not given for participation. Identifying information was not collected from the respondents. However, individual survey responses were traceable to a unique respondent identification number that was randomly assigned by the survey distributor.

To help increase survey participation, on the first day of the second 4-week period, all SUO members were contacted via e-mail a second time. In addition, we limited our survey to a total of 10 questions. Depending on the urologists' practice, where applicable, each urologist was therefore required to answer between 2 and 9 questions (Fig. 1). In this regard, participation would require minimal time commitment on behalf of the busy practicing urologists. Only those urologists that responded to all required survey questions were included in the study. Responses were limited to 1 submission per urologist, with the underlying assumption that each urologist completed the survey under 1 login attempt from a single computer.

The survey queried surgeon demographics including surgeons' years of experience and case volume, where applicable. We also sought information on practice environment, type of pIVC regimen used, and specific instillation parameters. Surgeons' reasons for not using pIVC were also

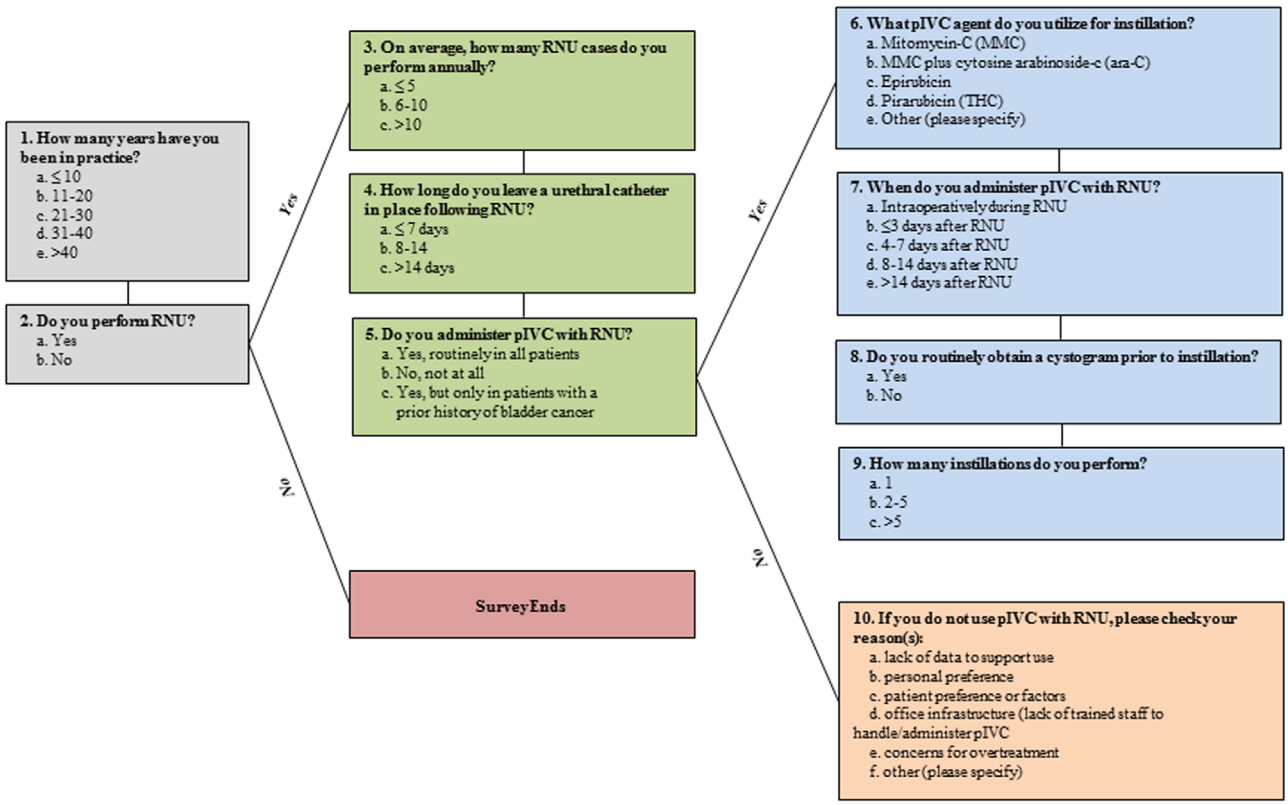

Fig. 1. Algorithm of survey questions delivered to 722 members of the Society of Urologic Oncology (SUO). (Color version of figure is available online.)