

An intrarenal approach using a percutaneous nephrostomy tube is a novel method to deliver chemotherapy and biotherapy to patients with upper urinary tract urothelial carcinoma. A paucity of evidence exists regarding basic nursing implications for this unique treatment option.

This column will provide suggested guidelines to administer intrarenal treatment via a percutaneous nephrostomy tube.

#### AT A GLANCE

- Upper urinary tract urothelial carcinoma may be treated using a topical approach, including instillation of chemotherapy/biotherapy agents through a percutaneous nephrostomy tube.
- Nursing implications of instillation directly into the renal pelvis and ureter are discussed, including care and safe handling.
- References and resources are provided to guide nurses who seek additional information on this practice.

#### KEYWORDS

percutaneous nephrostomy; urinary tract urothelial carcinoma; ureter; kidney

#### DIGITAL OBJECT IDENTIFIER

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# Percutaneous Nephrostomy Infusion

## Nursing considerations for treatment of upper urinary tract urothelial carcinoma

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An uncommon oncologic diagnosis is urothelial carcinoma (UC) of the upper urinary tract (UUT). Urothelial tumors are located in the lining (transitional cells) of the upper (i.e., kidney and ureters) or lower (i.e., bladder and urethra) urinary tract. Tumors in the bladder account for most of these malignancies; however, as many as 10% may be attributed to the upper tract (Rouprêt et al., 2015). An estimated 146,650 new cases of urinary cancers will be diagnosed in the United States in 2017; of those, about 79,030 will be bladder cancer and 3,630 will be cancer of the ureter and adjacent spaces (Siegel, Miller, & Jemal, 2017).

About one-third of patients with UUT UC present with hematuria; less common symptoms include flank pain and lumbar mass (Rouprêt et al., 2015). An international panel consisting of members from Europe and representatives from the United States released guidelines specific to treating UUT UC; however, they are directed primarily toward providers and lack specific details about nursing care (Rouprêt et al., 2015). According to these guidelines, current recommendations for diagnosis of suspected UUT UC are urinary cytology and computed tomography imaging; a cystoscopy is generally included in the evaluation to rule out

concurrent bladder tumors (Rouprêt et al., 2015).

### Treatment for Upper Urinary Tract Urothelial Carcinoma

Identifying best treatment options for UUT UC has remained difficult, partly because of the low volume of patients diagnosed. Standard of care is generally a surgical resection of the kidney and ureter, known as a nephroureterectomy. The latest guidelines suggest treatment with surgical resection and/or chemotherapy administration, whether systemic or topical (Rouprêt et al., 2015). Treating providers may opt for inclusion of postoperative adjuvant chemotherapy depending on staging, grading, and individual patient factors. Systemic chemotherapy often includes platinum-based agents; however, patients may be ineligible because of renal function and toxicity risks. According to Vassilakopoulou et al. (2011), adjuvant systemic chemotherapy for UUT UC does not necessarily provide significant benefit to affect overall survival, particularly in high-risk patients.

A viable treatment option for patients with UUT UC may be topical instillation of chemotherapy (e.g., Mitomycin C) or biotherapy (e.g., Bacillus Calmette-Guérin [BCG]) via percutaneous nephrostomy tube (Rouprêt et al., 2015). When used as adjunct therapy following tumor