Solitary kidney/impaired renal function, OR Severe comorbidity, OR Distal ureteral tumor(s) only

**Recommended approach**

- **Kidney-sparing treatment**
  - Endoscopic ablation
  - Segmental resection
  - Percutaneous approach

**Radical nephroureterectomy (RNU) +/- lymphadenectomy**

**Single postoperative dose of intravesical chemotherapy**

**Comprehensive prognostic evaluation**

Using results of the diagnostic workup, key factors determine the prognosis for UTUC. The most pertinent of these include:

**Disease characteristics**
- Grade
- Stage/invasiveness
- Tumor size
- Tumor location
- Focality (uni/multifocal)
- Concomitant carcinoma in situ (CIS) bladder cancer
- Presence of hydronephrosis
- Presence of enlarged lymph nodes

**Clinical/laboratory factors**
- Age
- Tobacco use
- Renal function/kidney status
- Comorbidity/performance status (Eastern Cooperative Oncology Group [ECOG] and/or American Society of Anesthesiologists [ASA])
- Body mass index (BMI) >30
- Neutrophil-to-lymphocyte ratio

**Low-risk disease characteristics**
- Presence of all of the following factors:
  - Unifocal disease
  - Tumor size <2 cm
  - Low-grade cytology
  - Low-grade ureteroscopic biopsy
  - No invasive aspect on CT urography/imaging

**High-risk disease characteristics**
- Presence of 1 or more of the following factors:
  - Hydronephrosis
  - Tumor size >2 cm
  - High-grade cytology
  - High-grade ureteroscopic biopsy
  - Multifocal disease
  - Previous radical cystectomy for bladder cancer
  - Variant histology

**At physician’s discretion, also consider**

- Predictive nomograms
- Novel imaging techniques
  - Narrow-band imaging (NBI)
  - Photodynamic diagnosis (PDD)
  - ‘Real-time’ pathology
  - Optical coherence tomography (OCT)
  - Confocal laser endomicroscopy (CLE)
- Urinary biomarkers
- Microsatellite instability (MSI) testing

**Diagnostic workup**

The following evaluations are recommended to confirm UTUC diagnosis and assess disease prognosis:

- Imaging
  - Recommended: Computed tomography (CT) urography
  - In patients not appropriate for CT, also consider:
    - Magnetic resonance (MR) urography with gadolinium-based contrast
    - Cystoscopy with retrograde pyelography
- Urinary cytology
- Cystoscopy (to rule out concomitant bladder cancer)
- Ureteroscopy (URS) +/- biopsy
  - To aid in diagnostic accuracy, consider BiGopsy forceps or 2.2 F Nitinol basket for biopsy
- Renal function tests

**References:**
2. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines ) for Bladder Cancer V.2.2017. © National Comprehensive Cancer Network, Inc. 2017. All rights reserved. Accessed June 26, 2019. To view the most recent and complete version of the guideline, go online to NCCN.org.

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