

UPPER TRACT UROTHELIAL CANCER

(UTUC) is a rare and difficult-to-treat urothelial cancer



Upper tract urothelial cancer (UTUC) is a rare cancer occurring in the **lining of the kidneys or ureters**¹



Urothelial cancer is the ninth most common cancer globally and **eighth most lethal neoplasm in men in the U.S.**²



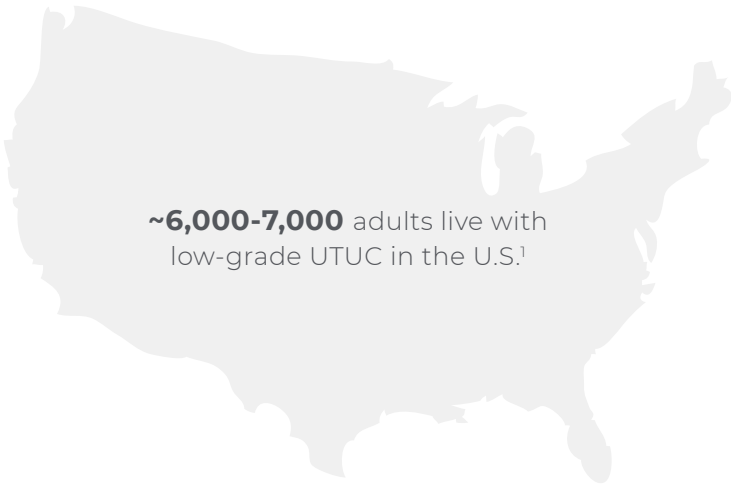
UTUC is most commonly diagnosed in people over 70 years old, and **~75% of the patient population is men**³

Low-grade UTUC



The grade (low or high) of UTUC refers to **how aggressive the cancer cells are** and how likely they are to spread.

Low-grade UTUC is usually not as aggressive and slower to spread compared to **high-grade UTUC**, but it is still a serious condition that can worsen if left untreated.



Challenges in Treating UTUC¹

- The anatomy of the upper urinary tract **poses challenges** in treating UTUC.
- Due to age and comorbidities, this patient population often faces a high rate of **recurrence and relapse**.
- Low-grade UTUC treatment approaches:
 - **Minor surgery**, including endoscopic resection or endoscopic management
 - **Wait and watch** to see if the tumor returns after removal via minor surgery or biopsy
 - **Radical nephroureterectomy (RNU)**, a radical surgery that removes the entire kidney and ureter

Common Comorbidities^{4,5}

- **Cardiac disease**
- **Hypertension**
- **Diabetes**
- **Hyperlipidemia**
- **Pulmonary Disease**

RNU is not appropriate for all patients



~50% of patients undergoing RNU already advanced to stage ≥ 3 chronic kidney disease (CKD)^{4,6}



RNU has been proven to accelerate the process of declining kidney function and progression to CKD^{6,7}



Comorbidities may further complicate declining renal function, and may hinder patient recovery

Even low-grade UTUC is often treated with RNU, which has significant limitations and can be largely burdensome.

What if patients with low-grade UTUC could be treated without risking surgical complications?

Kidney-sparing procedures could be the future of low-grade UTUC management.

References

1. Szarvas, Tibor et al. "Why are upper tract urothelial carcinoma two different diseases?." *Transl Androl Urol.* vol. 5,5 (2016): 636-647. doi:10.21037/tau.2016.03.23
2. Park JC, Hahn NM. "Bladder cancer: a disease ripe for major advances." *Clin Adv Hematol Oncol.* 2014;12(12):838-845.
3. Fiuk and Schwartz. "Upper tract urothelial carcinoma: Paradigm shift towards nephron sparing management." *World J Nephrol.* 2016 Mar 6; 5(2): 158–165. doi: 10 .5527/wjn.v5.i2.158.
4. Raman JD, Lin YK, Shariat SF, et al. "Preoperative nomogram to predict the likelihood of complications after radical nephroureterectomy." *BJU Int.* 2017;119(2)268-275.
5. Lin YK, et al. "Critical analysis of 30 day complications following radical nephroureterectomy for upper tract urothelial carcinoma." *Can J Urol.* 2014;21(4):7369-7373.
6. Raman JD, Lin YK, Kaag M, et al. "High rates of advanced disease, complications, and decline of renal function after radical nephroureterectomy." *Urol Oncol.* 2014;32(1):47.e9-14.
7. Kaag MG, O'Malley RL, O'Malley P, Raman JD. "Changes in renal function following nephroureterectomy may affect the use of perioperative chemotherapy." *Eur Urol.* 2010;58(4)581-587.