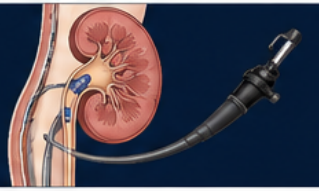
Recurrence After Endoscopic Management of Upper Tract Urothelial Carcinoma: Incidence, Predictors, and Clinical Consequences

A Multicenter International Cohort Study (n = 277)



COHORT

277 patients
5 centers (Italy, Spain, USA)
2019–2023

Endoscopic management of UTUC (kidney-sparing approach)

Median follow-up: 24.2 months (IQR 12.1–36.4)

RECURRENCE:

96 patients (34.7%)

Median time to recurrence: 11.8 months (IQR 6.1–20.4)

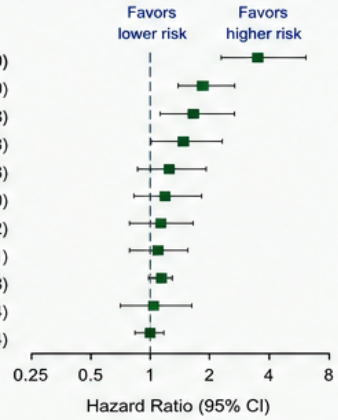
KEY FINDING

High biopsy grade is the strongest predictor of recurrence.

Multivariable HR 3.27 (95% CI 1.91–5.60), $P < 0.001$

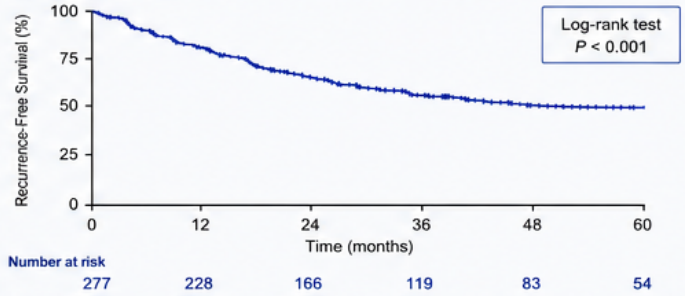
INDEPENDENT PREDICTORS OF RECURRENCE

Variable	HR (95% CI)
High grade vs Low grade	**3.27 (1.91–5.60)**
Multifocal vs Unifocal	1.73 (1.11–2.69)
Intermediate grade vs Low grade	1.67 (0.90–3.08)
Positive cytology vs Negative	1.46 (0.94–2.28)
Hydronephrosis (Yes vs No)	1.22 (0.80–1.86)
Tumor size ≥2 cm vs <2 cm	1.18 (0.78–1.80)
Prior bladder cancer (Yes vs No)	1.11 (0.71–1.72)
Male vs Female	1.06 (0.70–1.61)
Age (per 10-year increase)	1.03 (0.87–1.23)
Diabetes (Yes vs No)	1.00 (0.61–1.64)
eGFR (per 10 mL/min/1.73 m²)	0.96 (0.81–1.14)



OUTCOMES

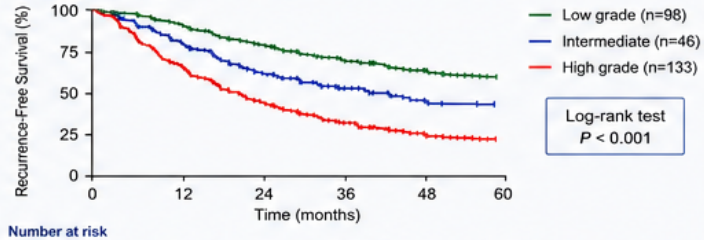
1. RECURRENCE-FREE SURVIVAL (Entire Cohort)



Number at risk

277	228	166	119	83	54

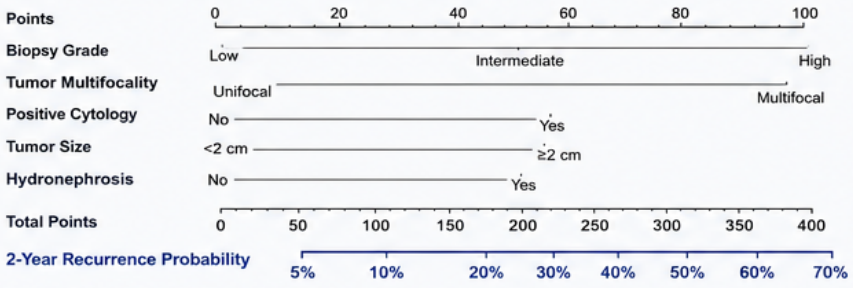
2. RECURRENCE-FREE SURVIVAL BY BIOPSY GRADE



Number at risk

Low grade	98	71	56	43	27
Intermediate grade	46	37	18	11	7
High grade	133	103	71	29	20

3. NOMOGRAM FOR 2-YEAR RECURRENCE PROBABILITY



EXAMPLE PATIENT

- High grade
- Multifocal
- Positive cytology
- Tumor size ≥2 cm
- Hydronephrosis: Yes

Total Points: 238

2-Year Recurrence Probability: ~45%

4. CLINICAL CONSEQUENCES OF RECURRENCE

Repeat endoscopic treatment performed in **68.8%** of recurrent cases

Delayed radical nephroureterectomy in 39.6% of recurrent cases

Cancer progression at recurrence in 15.6% of recurrent cases

Cancer-specific mortality associated **with invasive progression, not recurrence alone**

CONCLUSION: Recurrence after endoscopic management of UTUC is frequent but does not inevitably lead to nephroureterectomy. High biopsy grade, tumor multifocality, and positive cytology are key predictors and should guide surveillance intensity and counseling.

UTUC: Upper Tract Urothelial Carcinoma
RNU: Radical Nephroureterectomy

Source: Multicenter International Cohort Study, 2019–2023 (N=277)

Created for European Urology – Graphic Abstract