### Appendix II

#### Summary of evidence regarding the test characteristics for radiologic tests for the identification of high grade UTUC.

<table>
<thead>
<tr>
<th>Author, Year Sample size Study Design</th>
<th>Key Inclusion Criteria</th>
<th>Diagnostic test Reference standard</th>
<th>Results: Diagnostic accuracy for identifying HG disease and/or association of test result with HG disease (95% CI, unless otherwise indicated)</th>
</tr>
</thead>
</table>
| **Mammen,**46 2018 N=48 (with 49 UTUCs) Retrospective [chart review] Moderate | UTUC with RNU | Test: CT Reference: Final surgical pathology results | Findings on CT  
Appearance: filling defect or mass vs. wall thickening or stricture  
Sensitivity: 86% (73% to 95%)  
Specificity: 20% (51% to 72%)  
PPV: 90% (85% to 94%)  
NPV: 14% (2% to 53%)  
Margin: spiculated vs. smooth  
Sensitivity: 50% (35% to 65%)  
Specificity: 80% (28% to 99%)  
PPV: 96% (79% to 99%)  
NPV: 15% (10% to 24%)  
Collecting system: Dilated vs. non-dilated  
Sensitivity: 43% (28% to 59%)  
Specificity: 60% (15% to 95%)  
PPV: 90% (76% to 97%)  
NPV: 11% (5% to 20%)  
Texture: heterogeneous vs. homogeneous  
Sensitivity: 70% (55% to 83%)  
Specificity: 100% (48% to 100%)  
PPV: 100% (NA)  
NPV: 28% (20% to 38%)  
Calcification vs. no calcification  
Sensitivity: 14% (5% to 27%)  
Specificity: 100% (48% to 100%)  
PPV: 100% (NA)  
NPV: 12% (10% to 13%)  |
| **Ng,**47 2011 N=106 Retrospective [chart review] Moderate | UTUC with RNU | Test: CT (ipsilateral hydronephrosis) Reference: Final surgical pathology results | Sensitivity: 40% (26% to 56%)  
Specificity: 66% (53% to 78%)  
PPV: 49% (37% to 61%)  
NPV: 58% (51% to 65%)  
Hydronephrosis on CT was not significantly associated with HG (chi-squared test, p=0.49) |
| **Almas,**49 2021 N=176 (CT); N=60 (cytology) Retrospective [chart review] High | UTUC with RNU | Test: CT (n=176) Test: Urinary cytology (n=60; 43 with sample during ureteroscopy) Reference: Final surgical pathology results | CT for predicting NOCD (≥pT3 and/or N+) [n=176] Local invasion on CT:  
Sensitivity: 49%  
Specificity: 85%  
Pathological lymph nodes on CT:  
Sensitivity: 22%  
Specificity: 98%  
Urine cytology  
Presence of NOCD according to presence of malignant cells on cytology: OR 1.84 (95% CI: 0.55 to 6.14), p=0.3 |
| **Scolieri,**48 2000 N=37 Retrospective [chart review] Moderate | UTUC with RNU or distal ureterectomy | Test: CT Reference: Final surgical pathology results | For HS (≥pT3)  
Sensitivity: 28% (8% to 76%)  
Specificity: 100% (88% to 100%)  
PPV: 100% (NA)  
NPV: 85% (77% to 91%)  
CT failed to detect 34% (10/29) of tumors staged <pT3, which was treated as <T3 on CT for the above measures of diagnostic accuracy |
| **Yu,**50 2021 N=125 Retrospective [chart review] Low | UTUC with RNU with MDCTU | MDCTU | For HS (≥pT3)  
Sensitivity: 75% (59% to 87%)  
Specificity: 84% (74% to 91%)  
PPV: 68% (56% to 78%)  
NPV: 88% (80% to 92%) |