Table 1. The renal function predicting values based on scoring systems of tumor complexity

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scoring system | | CSA | RENAL | C-index | PADUA | DAP | PPPM |
| Leslie S, 2014.  PMID: 24680360 | Endpoint | NB eGFR |  |  |  |  |  |
| Results | OR: 2.12 (≥20cm2 vs <20cm2) |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Hsieh PF, 2016. PMID: 26820552 | Endpoint | 10% GFR change |  |  |  |  |  |
| Results | CSA vs RENAL, AUC:0.86 vs 0.69 | AUC: 0.69, <CSA |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Haifler M, 2018. PMID: 28941921 | Endpoint | 20% GFR decline |  |  |  |  |  |
| Results | CSA vs RENAL, AUC:0.94 vs 0.80 | AUC: 0.80, <CSA |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Suk-Ouichai C, 2018. PMID: 29522868 | Endpoint | Ipsilateral function |  |  |  |  |  |
| Results | r = 0.25, modest |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Tanaka H, 2019. PMID: 30291914 | Endpoint | Ipsilateral function | Ipsilateral function |  |  |  | Ipsilateral function |
| Results | r = 0.30, modest,  <PPPM | r = 0.30, modest,  <PPPM |  |  |  | r = 0.46 |
|  |  |  |  |  |  |  |  |
| Simmons MN, 2012. PMID: 22698624 | Endpoint |  | Ipsilateral function | Ipsilateral function |  | Ipsilateral function |  |
| Results |  | r2=0.77, <DAP | r2=0.77, <DAP |  | r2 = 0.81, >RENAL |  |
|  |  |  |  |  |  |  |  |
| Gupta R, 2019. PMID: 30107186 | Endpoint | Nadir eGFR | Nadir eGFR |  | Nadir eGFR |  | Nadir eGFR |
| Results | P = 0.027 | P =0 .045 |  | No significance, <RENAL (P =0 .045), <CSA (P = 0.027), < PPPM (P = 0.012) |  | P =0 .012 |

**Abbreviations:** C-index, centrality index; CSA, contact surface area; DAP, diameter-axial-polar; NB eGFR, new baseline estimated glomerular filtration rates; PADUA, preoperative aspects and dimensions used for an anatomical classification; PPPM, percent of preserved parenchymal mass.

References:

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| --- | --- | --- | --- | --- | --- | --- |
| CSA | Eur Urol 2014; 66: 884  (Endpoints) | J Urol  2016; 196: 33 | J Urol 2018; 199:  649. | Int J  Urol 2016; 23: 667 | Urology 2018; 116: 106.(negative) | J Urol  . 2019; 201(4):693-701(ipsilateral) |
|  | NBeGFR: OR: 2.12 (≥20cm2 vs <20cm2)  Kidney preserve | 10% GFR change:  CSA vs RENAL; AUC:0.86 vs 0.69 | 20% GFR decline:  CSA vs RENAL; AUC:0.94 vs 0.80 | Kidney preserve:  AUC:0.649 | ipsilateral function and mass preserved: r = 0.25, modest | ipsilateral function and mass preserved: r = 0.30, modest;  QE PPPM: 0.46 |
| RENAL | J Urol 2009; 182: 844. | J Urol 2012; 188: 39 | J Urol 2012; 188: 384.(ipsolateral) | Urology 2017; 99: 112 | Urology 2019; 124: 160−167. | J Urol  . 2019; 201(4):693-701 |
|  | no | Operated volume loss and functional recovery：  P<0.001 | **<DAP,** Operated volume loss and functional recovery:  r2=0.77 | Not overall, only ipsilateral function:  () | Nadir eGFR | ipsilateral function and mass preserved: r = 0.30, modest |
| C-index | J Urol. 2010 May;183(5):1708-13 | J Urol 2012; 188: 39 | J Urol 2012; 188: 384.(ipsolateral) |  |  |  |
|  |  | Operated volume loss and functional recovery：  P<0.001 | **<DAP;** Operated volume loss and functional recovery:  r2=0.77 |  |  |  |
| PADUA | Eur Urol. 2009;56:786–793 |  | BJU Int  . 2019 Apr;123(4):639-645.(correlation) |  | Urology 2019; 124: 160−167. |  |
| DAP | J Urol 2012; 188: 384(ipsolateral) |  |  |  |  |  |
|  | Operated volume loss and functional recovery：  r2 = 0.81 |  |  |  |  |  |
| PPPM |  |  |  |  | Urology 2019; 124: 160−167. | J Urol  . 2019; 201(4):693-701 |
|  |  |  |  |  | Nadir eGFR  later renal functional | ipsilateral function and mass preserved:  r = 0.46, |

**Abbreviations:** AUC, area under curve; C-index, centrality index; CSA, contact surface area; DAP, diameter-axial-polar; GFR, glomerular filtration rate; eGFR, estimated glomerular filtration rate; NB eGFR, new baseline estimated glomerular filtration rate; PADUA, preoperative aspects and dimensions used for an anatomical classification; PPPM, percent of preserved parenchymal mass; QE, quantitative estimation.