|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Outcomes** | **Study** | **Weight** | **WMD/OR 95%CI** | **P** | **Heterogeneity** | | |
| **Chi²** | **I²** | **P** |
| **Tumor size** | **Overall** | **100%** | **-0.40 [-0.74, -0.07]** | **0.02** | **30.7** | **84%** | **<0.0001** |
| Ex Brewer 2012 | 14.70% | -0.17 [-0.31, -0.03] | 0.01 | 4.62 | 13% | 0.33 |
| Ex Cai 2018 | 19.10% | -0.43 [-0.88, 0.01] | 0.06 | 30.27 | 87% | <0.00001 |
| Ex Deng 2019 | 12.60% | -0.44 [-0.81, -0.06] | 0.02 | 30.68 | 87% | <0.00001 |
| Ex Yang 2019 | 20.50% | -0.50 [-0.91, -0.09] | 0.02 | 26.81 | 85% | <0.0001 |
| Ex Yu 2020 | 18.50% | -0.50 [-0.91, -0.09] | 0.02 | 27.41 | 85% | <0.0001 |
| Ex Sun 2023 | 14.50% | -0.39 [-0.77, -0.01] | 0.04 | 29.67 | 87% | < 0.00001 |
| **Operative time** | **Overall** | **100%** | **12.86[2.09, 23.62]** | **0.02** | **18.39** | **73%** | **0.003** |
| Ex Brewer 2012 | 14.40% | 15.31 [2.99, 27.62] | 0.01 | 17.81 | 78% | 0.001 |
| Ex Mizrahi 2018 | 2.50% | 11.26 [1.09, 21.43] | 0.03 | 14.92 | 73% | 0.005 |
| Ex Deng 2019 | 14.90% | 11.75 [-0.29, 23.78] | 0.06 | 16.80 | 76% | 0.002 |
| Ex Yang 2019 | 26.50% | 16.67 [-0.03, 33.36] | 0.05 | 16.79 | 76% | 0.002 |
| Ex Yu 2020 | 23.20% | 17.07 [2.05, 32.09] | 0.03 | 16.53 | 76% | 0.002 |
| Ex Sun 2023 | 18.50% | 6.72 [-0.88, 14.33] | 0.08 | 6.69 | 40% | 0.15 |
| **Intraoperative blood loss** | **Overall** | **100%** | **67.28 [17.33, 117.23]** | **0.008** | **35.20** | **89%** | **< 0.00001** |
| Ex Simmons 2009 | 15.20% | 64.62 [10.11, 119.14] | 0.02 | 32.15 | 91% | <0.00001 |
| Ex Brewer 2012 | 10.10% | 44.72 [1.92, 87.53] | 0.04 | 21.24 | 86% | <0.0001 |
| Ex Deng 2019 | 24.90% | 93.18 [9.74, 176.63] | 0.03 | 33.80 | 91% | <0.00001 |
| Ex Yu 2020 | 27.40% | 95.75 [26.17, 165.32] | 0.007 | 16.70 | 82% | 0.0008 |
| Ex Sun 2023 | 22.40% | 51.85 [2.64, 101.05] | 0.04 | 18.89 | 84% | 0.0003 |
| Ex Sun 2023 | 11.00% | 1.13 [0.52, 2.46] | 0.76 | 2.31 | 13% | 0.32 |
| **Postoperative**  **Complications**  **(Ⅰ-Ⅱ grade)** | **Overall** | **100%** | **1.41 [0.73, 2.72]** | **0.31** | **12.24** | **67%** | **0.02** |
| Ex Deklaj 2010 | 16.20% | 1.32 [0.62, 2.82] | 0.47 | 10.98 | 73% | 0.01 |
| Ex Brewer 2012 | 20.50% | 1.57 [0.66, 3.70] | 0.31 | 12.22 | 75% | 0.007 |
| Ex Deng 2019 | 17.10% | 1.07 [0.62, 1.85] | 0.80 | 5.61 | 47% | 0.13 |
| Ex Yang 2019 | 25.70% | 1.80 [1.04, 3.13] | 0.04 | 4.06 | 26% | 0.26 |
| Ex Sun 2023 | 20.50% | 1.41 [0.61, 3.24] | 0.42 | 11.47 | 74% | 0.009 |
| **Postoperative**  **Complications**  **(≥Ⅲ grade)** | **Overall** | 100% | **1.25 [0.53, 2.95]** | **0.61** | **2.81** | **0%** | **0.42** |
| Ex Brewer 2012 | 24.50% | 1.36 [0.41, 4.49] | 0.62 | 2.81 | 29% | 0.25 |
| Ex Deng 2019 | 26.40% | 0.96 [0.35, 2.62] | 0.94 | 1.80 | 0% | 0.41 |
| Ex Yang 2019 | 35.20% | 2.03 [0.70, 5.89] | 0.19 | 0.57 | 0% | 0.75 |
| Ex Sun 2023 | 14.00% | 1.08 [0.42, 2.80] | 0.87 | 2.10 | 5% | 0.35 |
| **eGFR decline** | **Overall** | **100%** | **13.85 [10.05, 17.65]** | **< 0.00001** | **17.50** | **60%** | **0.01** |
| Ex Simmons 2009 | 9.80% | 14.11 [9.95, 18.27] | < 0.00001 | 17.36 | 65% | 0.008 |
| Ex Deklaj 2010 | 5.30% | 13.63 [9.64, 17.62] | < 0.00001 | 17.06 | 65% | 0.009 |
| Ex Brewer 2012 | 19.00% | 14.82 [10.77, 18.87] | < 0.00001 | 13 | 54% | 0.04 |
| Ex Cai 2018 | 15.90% | 12.56 [9.09, 16.02] | < 0.00001 | 10.77 | 44% | 0.1 |
| Ex Deng 2019 | 16.20% | 15.05 [11.53, 18.57] | < 0.00001 | 11 | 45% | 0.09 |
| Ex Yang 2019 | 17.10% | 13.54 [9.12, 17.96] | < 0.00001 | 16.58 | 64% | 0.01 |
| Ex Yu 2020 | 16.80% | 13.66 [9.20, 18.12] | < 0.00001 | 17.02 | 65% | 0.009 |
| Ex Sun 2023 | 0.00% | 13.44 [9.21, 17.67] | < 0.00001 | 16.48 | 64% | 0.01 |
| **CKD** | **Overall** | **100%** | **0.23 [0.10, 0.52]** | **0.0004** | **13.19** | **62%** | **0.02** |
| Ex Simmons 2009 | 17.40% | 0.24 [0.10, 0.62] | 0.003 | 11.44 | 65% | 0.02 |
| Ex Deklaj 2010 | 18.30% | 0.20 [0.07, 0.57] | 0.002 | 13.20 | 70% | 0.01 |
| Ex Brewer 2012 | 10.50% | 0.28 [0.12, 0.61] | 0.002 | 9.97 | 60% | 0.04 |
| Ex Deng 2019 | 20.70% | 0.19 [0.06, 0.55] | 0.002 | 13.38 | 70% | 0.01 |
| Ex Yang 2019 | 26.60% | 0.18 [0.08, 0.40] | < 0.0001 | 6.43 | 38% | 0.17 |
| Ex Sun 2023 | 6.40% | 0.30 [0.16, 0.59] | 0.0004 | 7.49 | 47% | 0.11 |
| **Tumor recurrence** | **Overall** | **100%** | **1.06 [0.42, 2.67]** | **0.91** | **11** | **55%** | **0.05** |
| Ex Simmons 2009 | 14.00% | 0.94 [0.33, 2.69] | 0.91 | 9.99 | 60% | 0.04 |
| Ex Deklaj 2010 | 6.80% | 1.12 [0.40, 3.14] | 0.83 | 10.97 | 64% | 0.03 |
| Ex Cai 2018 | 7.20% | 0.88 [0.37, 2.10] | 0.77 | 10.29 | 51% | 0.09 |
| Ex Mizrahi 2018 | 6.90% | 1.21 [0.45, 3.29] | 0.70 | 8.18 | 61% | 0.04 |
| Ex Yang 2019 | 34.40% | 1.69 [0.84, 3.38] | 0.14 | 3.64 | 0% | 0.46 |
| Ex Yu 2020 | 30.70% | 0.84 [0.28, 2.54] | 0.76 | 6.03 | 34% | 0.2 |

**Supplementary Material 2:** Leave-one-out sensitivity analysis for Meta-analysis results.

Ex: Exclude, WMD: Weighted Mean Difference, OR: Odds Ratio, CI: Confidence Interval, eGFR: estimated Glomerular Filtration Rate, CKD: Chronic kidney disease.