**Table 2:** Summary of Study Outcomes of Randomized Control Trials

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| ***Robotic assisted radical prostatectomy compared to open radical prostatectomy***11–13  Sexual quality of life (MD 3.9; 95% CI -1.84, 9.64)  Post-operative complications (RR 0.41; 95% CI 0.16, 1.04)  Post-operative pain (MD 0.01; 95% CI -0.32, 0.34)  Length of stay in hospital (MD -1.72; 95% CI -2.19, -1.25)  Blood transfusion (RR.24; 95% CI 0.12, 0.46)  Urinary quality of life (MD -1.3; 95% CI -4.65, 2.05)  Biochemical recurrence [n=4 (3%) vs n=13 (9%), p=0.02]  Evidence of recurrence on imaging [n=1 (1%), n=3 (2%), p=NR] |
| ***Laparoscopic Radical Prostatectomy Compared to Robotic Assisted Radical Prostatectomy***17  Operative time (138.1 ± 29.7 minutes vs 147.6 ± 27.1 minutes, p=0.068)  Blood loss (234.1 ± 150.1 ml vs 202.0 ± 124.0 ml, p=0.203)  Length of stay in hospital (4.6 ± 2.1 days vs 4.8 ± 1.9 days, p=0.59)  Urinary continence (61.6% vs 80%, p=0.04)  Erectile function recovery (54.2% vs 80%, p=0.02)  Biochemical recurrence-free survival rate (92.5% vs 98%, p=0.19) |
| ***Laparoscopic Radical Prostatectomy Compared to Robotic Assisted Radical Prostatectomy***16  Blood transfusion (5% vs 0%, p=0.1)  Length of catheter duration (7.45 ± 2.3 vs 7.25 ± 2.7 days, p=0.14)  Urinary continence (83.3% vs 94%, p=0.07)  Normal erectile function (23% vs 42%, p=0.03) |
| ***Robotic rectal resection compared to laparoscopic rectal resection*** 19–24  Incomplete mesorectal excision (RR 0.92; 95% CI 0.68, 1.25)  Circumferential margin involvement (RR 0.82; 95% CI 0.39, 1.73)  Mean number of lymph nodes harvested (MD -0.35; 95% CI -1.83, 1.12)  Anastomotic leak (RR 1.26; 95% CI 0.39, 4.10)  30-day mortality (RR 0.97; 95% CI 0.14, 6.86)  30-day postoperative complications (RR 1.02; 95% CI 0.80, 1.31)  Length of stay in hospital (MD -0.61; 95% CI -2.23, 1.02)  Conversion to open (RR 0.58; 95% CI 0.35, 0.97)  Operation duration (MD 38.43; 95% CI 31.84, 45.01)  Time to return of bowel function (MD -0.59; 95% CI -0.95, -0.23) |
| ***Robotic hysterectomy compared to laparoscopic hysterectomy for endometrial cancer*** 32  Operative time [139 minutes (range 86 - 197) vs 170 minutes (range 126 - 259), p<0.001]  Conversion to open surgery (n=0 vs n=5, p=0.027)  Estimated blood loss [50 (range 5-500), vs 50 (20-1200), p=0.5]  Blood transfusion [n=6(12%) vs n=2(4%), p=0.269]  Lymph nodes harvested [n=25 (range 14-52) vs n=23 (range 11-50), p=0.273]  Post-operative complications [n=18 (36%) vs n=12 (24%), p=0.275]  Length of stay in hospital [n=1 day (range 1-4), vs n=2 days (1-7), p=0.215] |
| ***Robotic hysterectomy compared to laparoscopic hysterectomy for benign uterine conditions***33  Length of stay in hospital (WMD -0.17 days; 95% CI -0.36, -0.02)  Operative time (WMD 23.13 minutes; 95% CI -21.25, 67.52)  Estimated blood loss (WMD -17.99; 95% CI -71.29, 35.3) |
| ***Robotic assisted cholecystectomy compared to laparoscopic cholecystectomy***37  Operative time (MD = 12.04 min; 95% CI 7.26, 16.82)  Intraoperative complications (RR 0.87; 95% CI 0.42, 1.80)  Estimated blood loss (MD -1.07; 95% CI -7.25, 5.11)  Conversion to open (RR 1; 95% CI 0.07, 14.9)  Postoperative complications (RR 1.76; 95% CI 0.41, 7.53)  Length of stay in hospital (MD 0.05; 95% CI -0.10, 0.21)  Incisional hernia (RR 6; 95% CI 0.38, 129.84) |
| ***Laparoscopic roux-en-y gastric bypass compared to robotic roux-en-y gastric bypass***40  Intraoperative complications (n=1 vs n=0, p=NR)  Length of stay in hospital (2.72 days vs 2.72 days, p=1.0)  Operative time (153.2 minutes vs 123.5 minutes, p=0.009) |

MD: mean differences, RR: relative risk, CI confidence intervals, n: number, NR: not reported, WMD: weighted mean differences, MD: mean differences,