

REVIEW

Same-day discharge in endometrial cancer surgery: current evidence and future directions

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Abstract

Endometrial cancer, one of the most common gynecologic malignancies, is increasingly associated with obesity and an aging population. Our semi-systematic review evaluated the current evidence on same-day discharge (SDD) following endometrial cancer surgery and conducted a bibliometric analysis. A PubMed search (January 2025) identified 11 studies, including 44,230 patients, predominantly from high-income countries, with 81.8% undergoing minimally invasive surgery and 14.5% sentinel lymph node mapping. No mortalities were reported, and readmission rates ranged from 1.5% to 3.4%. Our findings suggest that SDD is a feasible and safe approach, particularly in North America and for minimally invasive procedures. However, research gaps remain regarding implementation in low- and middle-income countries and in populations with severe obesity or advanced age. Future studies should emphasize standardized reporting, patient selection criteria, and comparative analyses across healthcare systems.

Keywords

Robotic surgery; Laparoscopy; Endometrial cancer; Minimally invasive surgery; Single day discharge; Same day discharge

1. Introduction

In 2022, the global incidence of uterine corpus cancer was reported as 420,242 cases, ranking it 15th among all cancers, with an associated mortality of 97,704 cases, placing it 19th in cancer-related deaths according to data from 185 countries [1]. The incidence of endometrial cancer and endometrial premalignancies is rising, driven by the increasing prevalence of obesity and an aging population. Currently, hysteroscopy, as a fertility-sparing surgical option in select cases of endometrial cancer and endometrial premalignancies, typically facilitates same-day discharge (SDD) following the procedure [2, 3]. Additionally, hysteroscopy combined with biopsy for endometrial cancer diagnosis typically allows for SDD following the procedure [4].

Minimally invasive surgery (MIS), including robot-assisted and laparoscopic techniques, has revolutionized patient outcomes in gynecologic oncology. Compared with open surgery, MIS offers significant advantages, including shorter hospital stays, fewer perioperative complications, faster recovery times, reduced postoperative pain, and superior cosmetic results. Sentinel lymph node (SLN) mapping has become a viable alternative for surgical staging in women with endometrial cancer, offering high diagnostic precision while minimizing morbidity [5]. Currently, the European Society of Gynaecological Oncology (ESGO) quality indicators for the surgical treatment of endometrial carcinoma recommend that the proportion of sentinel lymph node (SLN) procedures performed in patients undergoing lymph node staging should reach a target of 90% [6]. The application of the SLN concept in endome-

trial cancer through MIS has been associated with reduced hospital stays compared with open surgery and systematic lymphadenectomy [7].

In recent years, SDD has become increasingly available for both benign and malignant gynecologic surgeries. The primary aim of our semi-systematic review is to assess the current evidence on the use of SDD in the context of endometrial cancer surgery. As a secondary objective of our study, we conducted a bibliometric analysis of the selected studies to further explore trends and key findings in the field.

2. Methods

The main objective of our semi-systematic review was to evaluate the existing evidence on SDD in endometrial cancer surgery. As a secondary aim, we performed a bibliometric analysis of the included studies to examine research trends and highlight key findings in this area.

2.1 Search strategy

We conducted a semi-systematic literature review utilizing a comprehensive electronic search strategy in PubMed on 13 January 2025. Our search query comprised two main components: the first focused on keywords related to same-day discharge, and the second focused on endometrial cancer. We incorporated all relevant Medical Subject Headings (MeSH) for these terms, resulting in the final query: (same-day discharge) OR (outpatient) OR (day-case) OR (day case) OR (day care) OR (short stay) OR (ambulatory) OR (same day discharge) OR (single day discharge) OR (single-day discharge) AND (endometrial neoplasm) OR (neoplasm endometrial) OR (neoplasms endometrial) OR (endometrial carcinoma) OR (carcinoma endometrial) OR (carcinomas endometrial) OR (endometrial carcinomas) OR (endometrial cancer) OR (cancer endometrial) OR (cancers endometrial) OR (endometrial cancers) OR (endometrium cancer) OR (cancer endometrium) OR (cancers endometrium) OR (cancer of the endometrium) OR (carcinoma of endometrium) OR (endometrium carcinoma) OR (endometrium carcinomas) OR (cancer of endometrium) OR (endometrium cancers) OR (uterine neoplasms) OR (endometrial neoplasms) OR (carcinoma endometrioid) OR (endometrial neoplasms) OR (endometrial stromal tumors) OR (sarcoma endometrial stromal) OR (endometrial malignance) OR (endometrioid endometrial cancer) OR (cancer, endometrium (MeSH Terms)).

2.2 Selection of studies

We included only original research articles, excluding case reports, editorials, commentaries, book chapters, ongoing clinical trials, study protocols, retracted papers, and all types of review articles. Studies that involved multiple cancer types and did not provide a separate analysis for endometrial cancer were also excluded. Eligible studies were required to have full-text availability in English. We defined “same-day discharge” as ≤ 24 hours and excluded studies that reported postoperative length of hospital stay in days.

We performed study selection and data extraction via Cov-

idence software (Veritas Health Innovation Ltd., Melbourne, VIC, Australia, www.covidence.org). Four co-authors (EB, TAZ, XD, IK) independently screened the studies for their eligibility. Any discrepancies were resolved by the principal investigator (EB) through discussions with another member of the screening team. During the selection process, we followed the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 [8].

2.3 Data extraction

After finalizing the study selection, we extracted the following data from the full-text articles: author, year of publication, country of the study, study design, endometrial cancer staging, route of surgery (if robotic, then information on the robotic system used), surgical intervention, total number of patients, length of hospital stay, baseline characteristics, intraoperative outcomes, intraoperative complications, postoperative outcomes, postoperative complications, reports on safety, adherence to enhanced recovery after surgery (ERAS), follow-up, readmission, and complications after discharge. We accessed the journals' websites to retrieve their impact factors for the included studies. We categorized the countries into low-middle-income (LMIC), middle-income (MIC), or high-income (HIC) groups according to the World Health Organization's classification [9]. We collected the total number of citations and the annual citations for each article from Google Scholar (<https://scholar.google.com>).

We focused our data extraction exclusively on the cases with endometrial cancer, excluding cumulative analyses that include hospital stays extending beyond 24 hours and cases other than endometrial cancer.

2.4 Statistics

We calculated frequencies, summaries, and percentages as needed and gathered patient data when necessary. For these calculations, we used Python 3.0, executing the analysis through Python scripts on Google Colab, an interactive computing environment (<https://colab.research.google.com>). All codes used for analysis are provided in the **Supplementary material**.

3. Results

We identified 3552 studies through our search strategy in PubMed. After removing duplicates, 3551 studies remained for screening, and the detailed selection process was outlined in the PRISMA flowchart, automatically created by Covidence (Fig. 1). In our final analysis, 11 studies met our inclusion criteria.

Table 1 (Ref. [10–20]) presents the characteristics of the included studies, detailing the following variables: author, year, country, study design, stage, route of surgery, surgical intervention, number of patients (n), definition of length of hospital stay, and baseline characteristics. All the studies were published from HICs (90.9% from the USA and 9.1% Canada) which represents exclusively North America. The data distribution reveals that 54.6% of the cases were from single-center studies, while 45.5% were from multi-center

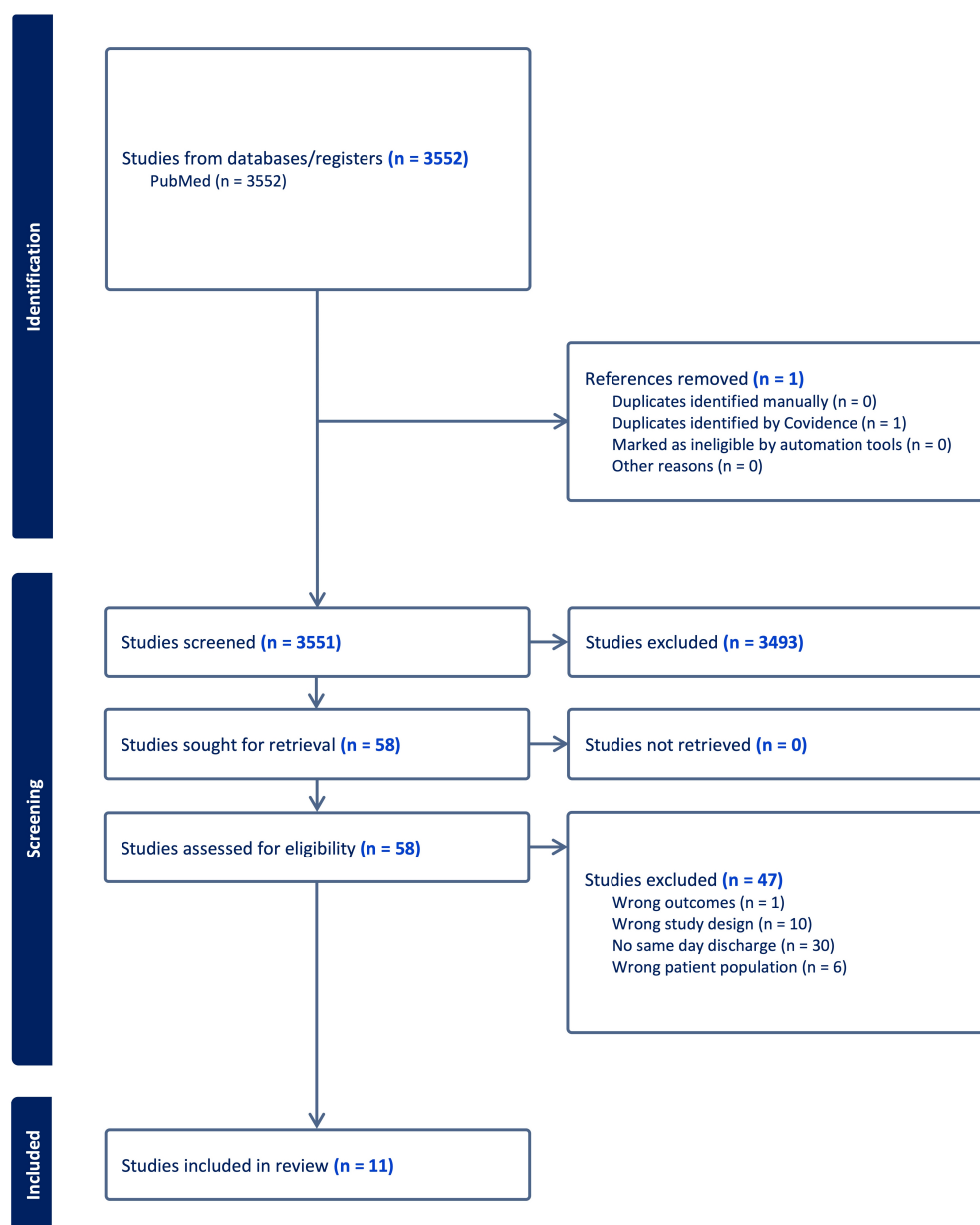


FIGURE 1. PRISMA flowchart for selection of the included studies.

studies. Additionally, 90.91% of the studies were retrospective. Only three studies provided information on staging, with one exclusively focused on stage I, while the other two included cases ranging from stage I to stage IV.

The included studies consisted of 81.8% MIS-only cases. Among these, two were performed exclusively via a laparoscopic approach (18.2%), and two were performed exclusively using the robotic da Vinci Si or Xi platforms (18.2%). Abdominal and vaginal routes of surgery were reported in 35 and 297 of the cases, respectively. Overall, the total number of patients was 44,230, with a maximum of 31,454 from a single study and a minimum of 21 patients. All the reported patients underwent hysterectomy. Among the reported cases, SLN was performed in 14.5% of the cases ($n = 6418$).

The reported baseline characteristics included a diverse age range, with patients aged over 65 years, and a variety of body mass indices, including individuals classified as obese (Body mass index (BMI) >30 kg/m²). The cohort also exhibited a

range of comorbidities, such as hypertension, diabetes, tobacco use, an American Society of Anesthesiologists (ASA) physical status classification of 3, and a history of myocardial infarction.

Table 2 (Ref. [10–20]) resents the perioperative outcomes, including intraoperative outcomes, intraoperative complications, postoperative complications before discharge, safety, adherence to ERAS, follow-up, readmission, and complications after discharge, as reported by the authors and years. Only four studies (36.4%) reported adherence to ERAS protocol. Only five studies reported readmission after surgery, where in their study cohorts the percentages ranged from 1.5% to 3.4%. The included studies reported no mortality.

We present the journal names ($n = 9$) and impact factors (IF) in Fig. 2 (with IFs ranging from a minimum of 1.2 to a maximum of 8.7). The citations per year for each study were shown in Fig. 3, (Ref. [10–20]) where total citations were 193 (ranging from a minimum of 1 to a maximum of 52).

TABLE 1. Characteristics of the included studies.

Author, year	Country	Study Design	Stage	Route of surgery	Surgical intervention	Patients (n)	Description on length of hospital stay	Baseline characteristics
Rettenmaier <i>et al.</i> [10], 2012	USA	Retrospective Single-center	Stage I	Laparoscopic	TLH BSO BPLND	21	Discharged before midnight on the same day of surgery ● mean hospital stay: 6.35 h $\pm$ 2.30 h	● Age (yr): 61 $\pm$ 7.56 ● BMI (median), kg/m²: 31.3 $\pm$ 8.02 ● Comorbidities ○ HTN: 11 (52.4%) ○ Obesity: 9 (42.9%) ○ Back pain: 1 (4.8%) ○ Cholesterol: 7 (33.3%) ○ Renal disease: 1 (4.8%) ○ Heart murmur: 1 (4.8%) ○ None: 1 (4.8%)
Lee <i>et al.</i> [11], 2016	USA	Retrospective* Multi-center	NR	MIS [†]	● Radical Hysterectomy: 54 (7.4%) ● Simple Hysterectomy: 675 (92.6%) ● Lymph node dissection: 368 (50.5%)	729	Discharge home on the same calendar day as the date of surgery	● Age (yr): 61 $\pm$ 10.7 ● BMI, kg/m²: 31.4 $\pm$ 8.8 ● ASA 1: 36 (4.9%) ● ASA 2: 435 (59.7%) ● ASA 3: 256 (35.1%) ● ASA >3 or unknown: 2 (0.3%) ● Nonsmoker: 670 (91.9%) ● Comorbidities ○ Diabetes: 119 (19.5%) ○ COPD: 4 (0.5%) ○ HTN: 330 (45.3%) ○ Congestive heart failure: 0 (0.0%) ○ Renal failure on dialysis: 0 (0.0%) ○ History of TIA or CVA: 0 (0.0%) ○ History of MI: 0 (0.0%)

TABLE 1. Continued.

Author, year	Country	Study Design	Stage	Route of surgery	Surgical intervention	Patients (n)	Description on length of hospital stay	Baseline characteristics
Praiss <i>et al.</i> [12], 2019	USA	Retrospective [‡] Multi-center	NR	Laparoscopic	Hysterectomy Concomitant procedures • Anterior repair: 13 (0.7%) • Posterior repair: 2 (0.1%) • Incontinence repair: 4 (0.2%) • Oophorectomy: 23 (1.3%) • Colpopexy: 2 (0.1%) • Lymphadenectomy: 764 (41.8%)	1828	Same-day discharge	• Age (yr) ○ <50 (242, 13.2%) ○ 50–59 (577, 31.6%) ○ 60–69 (696, 38.1%) ○ 70–79 (254, 13.9%) ○ ≥80 (59, 3.2%) • BMI ○ Normal: 374 (20.5%) ○ Overweight: 413 (22.6%) ○ Obese: 1032 (56.5%) ○ Unknown: 9 (0.5%) • Smoking: 141 (7.7%) • Comorbidities ○ Diabetes: 306 (16.7%) ○ COPD: 13 (0.7%) ○ Ascites: 2 (0.1%) ○ Congestive heart failure: 1 (0.1%) ○ HTN on medication: 823 (45.0%) ○ Acute renal failure: 1 (0.1%) ○ Dialysis: 1 (0.1%) ○ Open wound: 1 (0.1%) ○ Steroid use: 28 (1.5%) ○ Weight loss: 6 (0.3%) ○ Bleeding disorder: 11 (0.6%) ○ Transfusion: 3 (0.2%) • Albumin, g/dL ○ <3.5: 23 (1.3%) ○ 3.5–4: 222 (12.1%) ○ >4: 502 (27.5%) ○ Unknown: 1081 (59.1%) • ASA ○ ASA ≤1: 62 (3.4%) ○ ASA 2: 1007 (55.1%) ○ ASA 3: 745 (40.8%) ○ ASA 4–5: 14 (0.8%)

TABLE 1. Continued.

Author, year	Country	Study Design	Stage	Route of surgery	Surgical intervention	Patients (n)	Description on length of hospital stay	Baseline characteristics
Cappuccio <i>et al.</i> [13], 2021	USA	Retrospective [§] Multi-center	NR	Abdominal: 35 (0.4%) Vaginal: 297 (3.1%) Laparoscopic: 1860 (19.1%) Robotic: 7553 (77.5%)	Hysterectomy Concomitant procedures ● Lysis of adhesion: 643 ● Repair of POP: 150 ● Lymphadenectomy: 5418	9745	24 hours, or those that occurred on the same day of surgery, or ambulatory surgery were classified as an outpatient procedure	● Age (yr) ○ 18–44: 774 (7.9%) ○ 45–54: 1615 (16.6%) ○ 55–64: 3793 (38.9%) ○ ≥65: 3563 (36.6%) ● BMI ○ Not Overweight or obese: 6597 (67.7%) ○ Overweight: 37 (0.4%) ○ Obese: 1231 (12.6%) ○ Morbidly obese: 1880 (19.3%) ● CCI category ○ CCI <3: 6108 (62.7%) ○ CCI = 3: 2341 (24.0%) ○ CCI >3: 1296 (13.3%) ● Uterus bleeding: 366 (3.8%)
Tait <i>et al.</i> [14], 2021	USA	Retrospective Single-center	NR	MIS	Simple hysterectomy SLN: 46 (82.1%) Full lymphadenectomy, including para-aortic node dissection: 10 (17.9%)	56	NR	NR
Dioun <i>et al.</i> [15], 2022	USA	Retrospective [¶] Multi-center	NR	MIS	Hysterectomy SLN: 6164 (19.6%) Lymph node dissection: 14,266 (45.4%) No Lymph node dissection: 11,024 (35.1%)	31,454	Length of stay was calculated as the time period from admission until discharge during the hospitalization for hysterectomy	NR
Lees <i>et al.</i> [16], 2022	USA	Retrospective Multi-center	NR	MIS	Hysterectomy ● Pre-COVID: 32 (39.0%) ● COVID: 50 (61.0%)	82	NR	NR

TABLE 1. Continued.

Author, year	Country	Study Design	Stage	Route of surgery	Surgical intervention	Patients (n)	Description on length of hospital stay	Baseline characteristics
Mateshaytis <i>et al.</i> [17], 2022	Canada	Quality Improvement with SDD Intervention Single Center	NR	Robotic	NR	NR	No overnight surveillance	NR
Son <i>et al.</i> [18], 2022	USA	Retrospective Single-center	NR	MIS Robotic: 7 (10.6%) Laparoscopic: 59 (89.4%)	Hysterectomy • SLN: 57 (86.4%) • Lymphadenectomy: 0 (0%) • Omental biopsy: 3 (4.5%) • Adhesiolysis: 9 (14.1%) ○ Mild: 4 (44.4%) ○ Moderate: 2 (22.2%) ○ Severe (>1 h lysis): 3 (33.3%)	66	Same-day discharge	• Age (yr): 62.2 ± 8.4 [40, 81] • BMI: 34.3 ± 8.3 • CCI: 4.0 [3.0, 5.0] • History of prior surgery: 43 (65.2) ○ Laparoscopic surgery: 20 ○ Laparotomy or multiple surgeries: 24
Zhang <i>et al.</i> [19], 2022	USA	Retrospective Single-center	IA: 95 (72.0%) IB: 17 (12.9%) II: 8 (6.1%) IIIA: 2 (1.5%) IIIC1: 5 (3.8%) IIIC2: 3 (2.3%) IVA: 0 (0%) IVB: 2 (1.5%)	Robotic da Vinci Si or Xi robotic platform (Intuitive, Sunnyvale, CA)	Total hysterectomy Concomitant surgeries • BSO: 131 (100%) • SLN: 93 (70.5%) • Pelvic lymph node dissection: 18 (13.6%) • Pelvic and peri-aortic lymph node dissection: 21 (15.9%) • Lysis of adhesions: 15 (11.4%) • Cystoscopy: 80 (60.6%) • Omentectomy: 1 (0.8%) • Mini-laparotomy: 2 (1.5%) • Appendectomy: 1 (0.8%) • Peritoneal biopsy: 1 (0.8%)	132	Same-day discharge: 4.2 h (range, 1.9–10.3) after surgery	• Age (yr): 58.76 ± 11.1 • BMI: 37.5 ± 9.6 • HTN: 81 (61.4%) • Diabetes mellitus: 47 (35.6%) • COPD: 3 (2.3%) • Asthma: 5 (3.8%) • OSA: 7 (5.3%) • CHF: 2 (1.5%) • History of CVA/MI: 3 (2.4%) • History of VTE: 2 (1.5%) • Median distance from hospital (miles, range): 49.30 (1.9–155) • ASA ○ ASA 1: 1 (0.8%) ○ ASA 2: 58 (43.9%) ○ ASA 3: 72 (54.5%) ○ ASA 4–5: 1 (0.8%)

TABLE 1. Continued.

Author, year	Country	Study Design	Stage	Route of surgery	Surgical intervention	Patients (n)	Description on length of hospital stay	Baseline characteristics
Giannini <i>et al.</i> [20], 2023	USA	Retrospective Single-center	I: 98 (83.7%) II: 8 (6.8%) III: 4 (3.4%) IV: 1 (0.8%)	Robotic Si and Xi da Vinci Surgical System (Intuitive Surgical, Sunnyvale, CA)	• Total hysterectomy (n = 117) • BSO (n = 117) • Peritoneal washing (n = 117) • Cystoscopy (n = 117) • Radical TRH SOB: 1 (0.8%) • Extensive Adhesiolysis: 2 (1.7%) • Omentectomy: 2 (1.7%) • Bowel procedures: 0 (0%) • Appendectomy: 1 (0.8%) • Hernia reparation: 3 (2.6%) • Prolapse surgery: 2 (1.7%) • Vaginal procedures: 0 (0%) • Bladder, ureteral procedures: 1 (0.8%) • Biopsies: 3 (2.6%) • Pelvic lymphadenectomy: 8 (6.8%) • SLN: 58 (49.6%) • Aortic plus pelvic lymphadenectomy: 1 (0.8%)	117	Discharge on the same date of surgery	• All previous surgery: 63 (53.8%) • Previous laparoscopy: 32 (27.4%) • Previous laparotomy: 31 (26.5%) • Pathologic creatinine (<0.6 or >1.2 mg/dL): 6 (5.1%) • Perioperative anemia (Hb < 11 g/dL): 4 (3.4%) • BMI ◦ <25: 32 (27.3%) ◦ 25–29: 25 (21.4%) ◦ 30–39: 42 (35.9%) ◦ ≥40: 18 (15.4%) • No tobacco: 90 (76.9%) • Heart diseases: 13 (11.1%) • Diabetes: 18 (15.4%) • HTN: 41 (35.0%) • Kidney diseases: 1 (0.8%) • History of VTE: 4 (3.4%) • Asthma/COPD: 17 (14.5%) • Sleep apnea: 12 (10.2%) • Anticoagulant therapy: 3 (2.6%) • Insulin therapy: 0 (0%)

ASA: American Society of Anesthesiologists; BPLND: bilateral pelvic lymphadenectomy; BSO: bilateral salpingo-oophorectomy; CCI: Charlson Comorbidity Index; COPD: chronic obstructive pulmonary disease; CVA: cerebrovascular accident; HTN: hypertension; MI: myocardial infarction; MIS: minimally invasive surgery; NR: not reported; POP: pelvic organ prolapse; SDD: same-day discharge; TIA: transient ischemic attack; TLH: total laparoscopic hysterectomy; VTE: venous thromboembolism events; BMI: body mass index; SLN: Sentinel lymph node; OSA: Obstructive Sleep Apnea; CHF: Congestive Heart Failure; SOB: Salpingo-Oophorectomy and bilateral; TRH: total robotic hysterectomy; Hb: hemoglobin; COVID: coronavirus disease.

*American College of Surgeons' National Surgical Quality Improvement Project's database: the years 2007 to 2014.

†Differentiation between laparoscopy and robotic assisted laparoscopy did not reported.

‡American College of Surgeons National Surgical Quality Improvement Program (NSQIP) Participant Use Data File: the years 2011 to 2016.

§Premier Healthcare Database: the years 2008 to 2015.

¶Perspective Database: the years 2012 to 2018.

TABLE 2. Perioperative outcomes of the included studies.

Author, year	Intraoperative outcomes	Intraoperative Complications	Postoperative complications before discharge	Safety	Adheren to ERAS	Follow-up	Readmission	Complications after discharge
Rettenmaier <i>et al.</i> [10], 2012	• Operative (surgery & setup) time: 1.48 h $\pm$ 0.24 h • EBL: 76 mL $\pm$ 19.11 mL • Number of pelvic nodes removed: 12.23 $\pm$ 3.19	None	NR	NR	NR	5 mon $\pm$ 1.9	None	• Postoperative port-site skin separation (1) • Port-site infection (1) • Minor, bilateral lower extremity lymphedema (1)
Lee <i>et al.</i> [11], 2016	• Operative time: 131 min $\pm$ 56.9 min • Anesthesia time: 235 min $\pm$ 65.3 min	NR	NR	NR	NR	30 d	18 (2.5%)	• Reoperation: 4 (0.6%) • Surgical site infection: 1 (0.1%) • Wound dehiscence: 0 (0%) • Venous thromboembolism: 0 (0%) • Urinary tract infection: 13 (1.8%) • MI: 1 (0.1%) - Postoperative renal failure: 0 (0%) • Any wound infection: 17 (0.9%) ○ Superficial surgical-site infection: 4 (0.2%) ○ Deep surgical site-infection: 1 (0.1%) ○ Organ/space surgical-site infection: 12 (0.7%) • Any complication: 38 • Severe complications: 13 ○ Sepsis: 3 (0.2%) ○ Shock: 2 (0.1%) ○ Cardiac arrest: 0 (0%) ○ MI: 2 (0.1%) ○ Pulmonary embolism: 5 (0.3%) ○ Ventilation >48 h: 3 (0.2%) ○ Unplanned intubation: 3 (0.2%) • Intermediate complications: 28 ○ Pneumonia: 3 (0.2%) ○ Acute renal failure: 0 (0%) ○ Urinary tract infection: 22 (1.2%) ○ Cerebrovascular accident/stroke with deficit: 1 (0.1%) ○ Coma: 0 (0%) ○ Deep vein-thrombosis/thrombophlebitis: 2 (0.1%)
Praiss <i>et al.</i> [12], 2019	• Total operation time, quartiles ○ Low: 702 (38.4%) ○ Medium low: 497 (27.2%) ○ Medium high: 374 (20.5%) ○ High: 255 (13.9%)	NR	NR	NR	NR	NR	42 (2.3%)	

TABLE 2. Continued.

Author, year	Intraoperative outcomes	Intraoperative Complications	Postoperative complications before discharge	Safety	Adherence to ERAS	Follow-up	Readmission	Complications after discharge
Cappuccio <i>et al.</i> [13], 2021	NR	NR	NR	NR	NR	30 d	195 (2%)	0.03
Tait <i>et al.</i> [14], 2021	NR	NR	NR	NR	Yes	NR	NR	NR
Dioun <i>et al.</i> [15], 2022	NR	NR	NR	NR	NR	NR	NR	NR
Lees <i>et al.</i> [16], 2022	NR	NR	NR	NR	NR	NR	NR	NR
Mateshaytis <i>et al.</i> [17], 2022	NR	NR	NR	NR	Yes	NR	Pre-intervention: 0 (0%) Post-intervention: 0 (0%)	Presentation to emergency department - Pre-intervention: 0 (0%) - Post-intervention: 4 (3.2%)
Son <i>et al.</i> [18], 2022	• Surgery duration (min): 100.3 ± 36.0 • Surgery start after 2:00 PM: 10 (15.2%) • Surgery end time (24 h): 12.2 [10.7, 14.3] • Surgery end after 2:00 PM: 21 (31.8%) • EBL: 25.0 [25.0, 50.0] • Intraoperative antiemetic: 63 (95.5%)	NR	NR	NR	Yes, not all patients	NR	1 (1.5%)	• Emergency room visit: 3 (4.5%) • Urgent care visit: 2 (3.0%) • Phone encounter: 27 (40.9%)
Zhang <i>et al.</i> [19], 2022	• Surgery duration (min): 127 ± 34.4 • EBL: 35 ± 27.7 • Crystalloids (mL): 1217 ± 459.4	NR	NR	NR	NR	30 d	None	None

TABLE 2. Continued.

Author, year	Intraoperative outcomes	Intraoperative Complications	Postoperative complications before discharge	Safety	Adherence to ERAS	Follow-up	Readmission	Complications after discharge
Giannini <i>et al.</i> [20], 2023	• Surgery duration >180 min: 2 (1.7%) • EBL >200 mL: 0 (0%) • Discharge from PACU 2:00 PM: 16 (13.6%) • Start surgery after 2:00 PM: 7 (5.9%) • Catheter kept for surgical reasons: 4 (3.4%)	NR	NR	NR	Yes	30 d	4 (3.4%)	• Reoperations within 30 days: 0 (0%) • Any minor bleeding: 1 (0.8%) • Postoperative fever: 4 (3.4%) • Wound/trocar site infection/dehiscence: 1 (0.8%) • Pelvic abscess: 1 (0.8%) • Pneumonia: 2 (1.7%) • Uncontrolled pain: 2 (1.7%) • Vaginal cuff cellulitis: 5 (4.2%) • Ileus: 4 (3.4%) • Urinary retention: 6 (5.1%) • Lymphedema: 0 (0%) • UTI: 4 (3.4%)

EBL: estimated blood loss; MI: myocardial infarction; NR: not reported; PACU: post anesthesia care unit; UTI: urinary tract infection; ERAS: enhanced recovery after surgery.

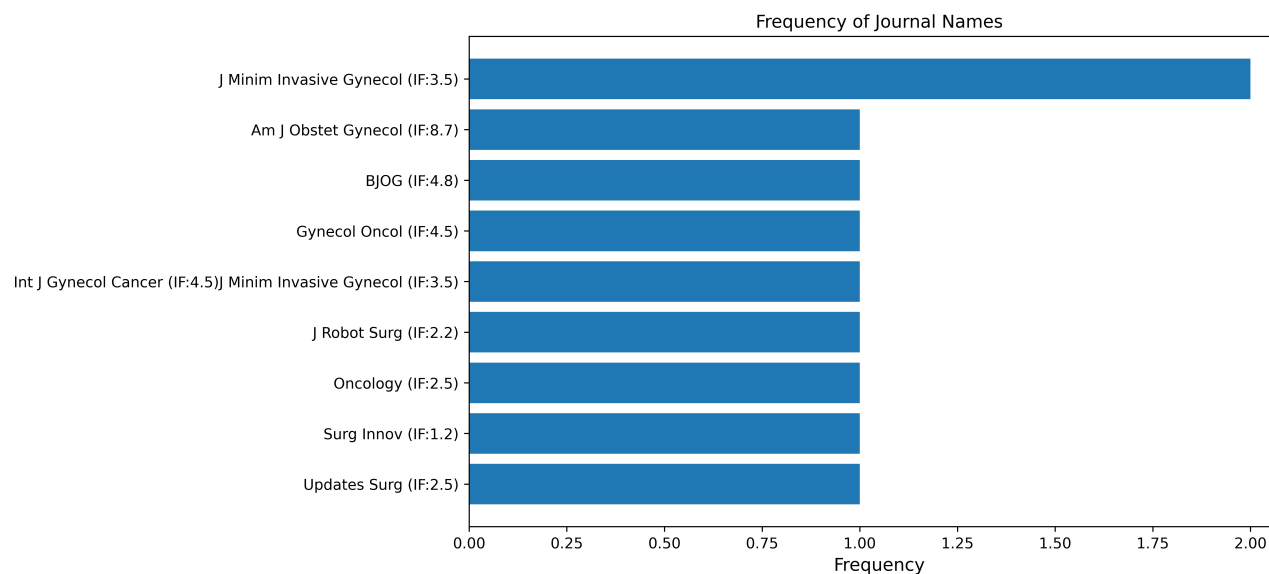


FIGURE 2. The journal names and impact factors. IF: impact factors.

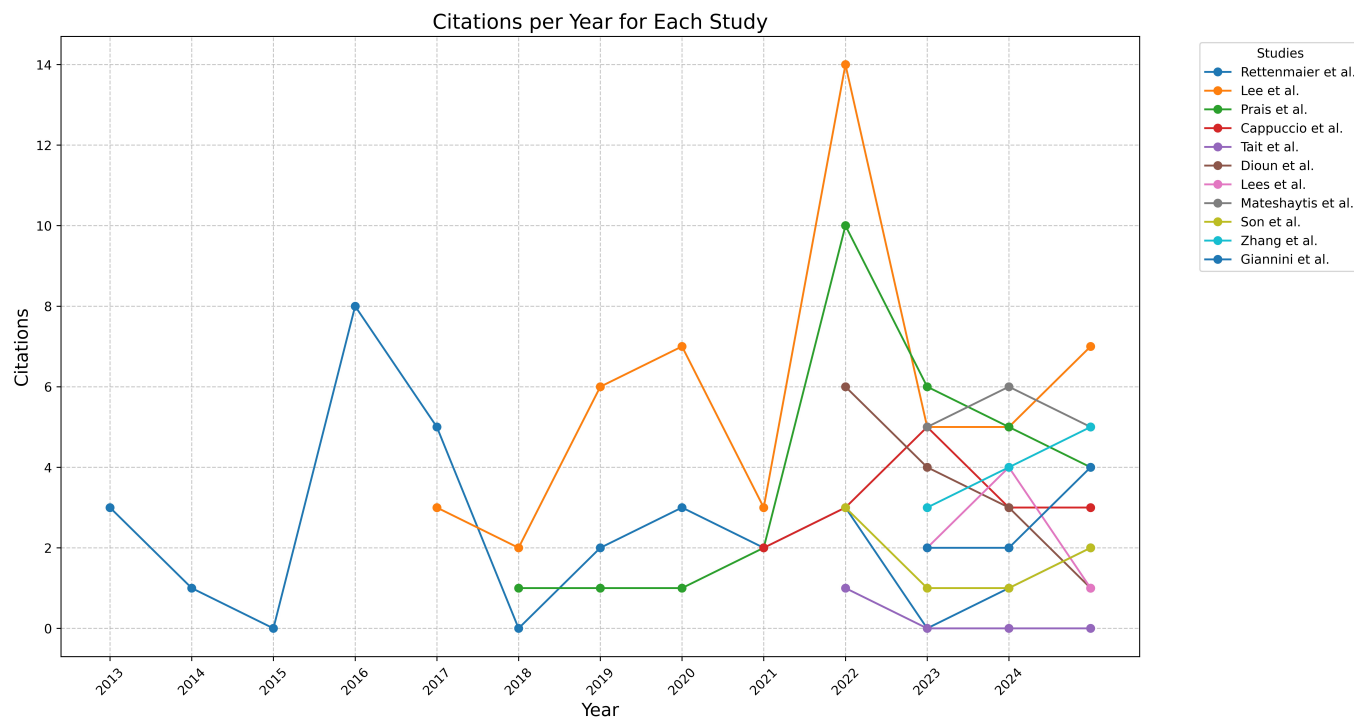


FIGURE 3. Citations per year for each study [10–20].

4. Discussion

In our final analysis, all 11 included studies were published in high-income countries, with the majority originating from the United States (90.9%) and Canada (9.1%). Most studies were retrospective (90.91%), and 54.6% were conducted at single centers. A total of 44,230 patients were included, with individual study sample sizes ranging from 21 to 31,454 patients. Of the cases, 81.8% underwent MIS. Only 14.5% ($n = 6418$) of patients had SLN, where all underwent hysterectomy. The cohort demonstrated a diverse range of baseline characteristics, including age, BMI, and comorbidities, such as hypertension, diabetes, and tobacco use. Notably, only 36.4% of studies reported adherence to ERAS protocols, while readmission rates ranged from 1.5% to 3.4%. No mortality was reported in any of the studies. The studies were published across nine different low-middle-income (LMIC), middle-income (MIC), or high-income with varying impact factors, collectively reaching a total of 193 citations.

Obesity is a well-known risk factor for endometrial cancer; however, the impact of severe obesity ($\text{BMI} > 40 \text{ kg/m}^2$) has not been addressed as a limitation in the selected studies, unlike in other studies in the literature [21, 22]. Similarly, the patient's age, particularly advanced age (≥ 75 years), has not been considered a contraindication to SDD [21, 22]. A meta-analysis of 29 studies involving 218,192 patients scheduled for or meeting the criteria for SDD after minimally invasive hysterectomy for both malignant and non-malignant gynecological conditions identified several factors that prevent SDD [23]. These factors include increasing age, higher BMI, greater distance from home, and the presence of certain comorbidities, such as diabetes mellitus and lung disease [23]. Additionally, radical hysterectomy, surgeries starting after 2 PM, longer operative durations, intraoperative complications, and surgeon

preference were also found to be significant risk factors for preventing SDD [23]. A crucial component of the success of the SDD is the emphasis on pre-operative counseling, patient education, and teamwork including nurses, gynecologic oncology team, and anesthesiologists. Achieving this within a hospital setting demands significant effort, similar to the multidisciplinary approach used in ERAS protocols.

Preoperative preparation plays a crucial role in the success of SDD protocols. Ensuring that prescriptions for postoperative medications are provided during the preoperative visit and educating patients on their proper use, as well as on postoperative care instructions, such as recommended exercise regimens and recovery management is essential. Additionally, proactive communication by the healthcare team, including follow-up contact on the first postoperative day, facilitates early identification of potential complications and promotes a seamless transition to home recovery. These strategies not only enhance patient safety, but also improve adherence to recovery protocols and boost patient satisfaction [24].

Overall, SDD facilitates the rapid restoration of bodily functions and the reintegration of patients into their daily lives. However, its impact on cost-effectiveness and the burden on healthcare systems has not been thoroughly investigated. Preoperative assessments and postoperative follow-ups, often conducted via telephone, still require healthcare personnel, adding to resource demands.

A recent cross-sectional study revealed that 22% of early-career gynecologic oncologists lack training in any form of surgical lymph node staging [25]. In our analysis, the reported incidence of SLN was low at 14.5%, which may be attributed to underreporting in large database studies. Thus, it is crucial to educate the next generation of gynecologic oncologists to ensure they meet the ESGO quality indicators and uphold the

highest standards of care [6].

Our study has several strengths and limitations. One of the key limitations is that it was a semi-systematic review based on a single database, which may have resulted in the omission of relevant articles from other sources. However, a major strength of our study lies in the application of well-defined inclusion and exclusion criteria. The inclusion of MIS techniques in the majority of the included studies highlights the health disparities in LMICs, particularly in terms of access to laparoscopic and robotic surgical systems. Additionally, our study did not examine survival-related outcomes, which warrants further investigation in future research. Furthermore, there was no specific analysis comparing laparoscopy to robotic surgery for SDD in endometrial cancer, an area that should be addressed in future studies. Further implementation research is warranted to enable the availability of SDD to patients with endometrial cancer. We accepted the definition of SDD as ≤ 24 hours after surgery. This definition includes both true same-day (day 0) discharge and discharge on postoperative day 1, which are clinically and logistically distinct scenarios. This methodological choice introduces heterogeneity into our study. Moreover, while most procedures included were minimally invasive ($>80\%$), a few studies incorporated open hysterectomies, which typically require longer hospitalization and may affect SDD evaluation. Furthermore, another important limitation of this review is the incomplete reporting of certain outcomes in the included studies, as indicated by “NR” (not reported) in the tables. The absence of these data may affect the robustness of our conclusions, particularly regarding safety and postoperative outcomes. All included studies were conducted in North America, which may limit the generalizability of our findings to other regions with different healthcare systems, patient populations, and perioperative care practices. This geographic concentration should be considered when interpreting the results and their implications, and caution is warranted before applying these findings universally. Future studies from diverse geographic regions are needed to validate the applicability of SDD protocols in broader settings. Additionally, follow-up was generally limited to 30 days, whereas 90-day follow-up is recommended to capture comprehensive postoperative morbidity and mortality. These factors limit the strength of conclusions regarding the safety of same-day discharge. The safety and feasibility of SDD are closely linked to the implementation of ERAS protocols. Standardized perioperative pathways, such as patient education, optimized anesthesia and analgesia, early mobilization, and structured postoperative follow-up, are essential to ensure that SDD can be safely achieved. Future studies should systematically report complications and adhere to standardized follow-up periods to better define the safety profile of same-day discharge.

5. Conclusions

While our study highlights the application of SDD after hysterectomy for endometrial cancer in high-income countries in North America, it also reveals critical gaps in research, particularly in LMICs. Future studies should address the impact of severe obesity, advanced age, and compare different surgical techniques, while expanding the research to include

diverse healthcare systems and survival outcomes.

AVAILABILITY OF DATA AND MATERIALS

Available upon request.

AUTHOR CONTRIBUTIONS

EB—designed the research study; performed the research; analyzed the data; wrote the manuscript. BBS, KG and ÇT—provided help and advice on study design. EB, TAZ, IK, XD and JKB—data extraction. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at <https://oss.ejgo.net/files/article/2011674141260693504/attachment/Supplementary%20material.pdf>.

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