

Surgical Risk Assessment in Elderly Patients (≥ 70 Years) with Endometrial Cancer: A Retrospective Study

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Abstract

Introduction: Endometrial cancer (EC) is one of the most common gynecologic malignancies. In elderly patients, treatment decisions are often influenced by comorbidities and presumed surgical risks. However, age alone may not be a sufficient criterion to guide management.

Objectives: To compare clinical characteristics, surgical treatment, perioperative complications, and survival outcomes in patients with EC aged under 70 versus those aged 70 or older.

Methods: This retrospective study included 206 patients who underwent surgical treatment for EC at a tertiary center between 2017 and 2018. Patients were divided into two groups: under 70 years (NOP, $n=105$) and 70 years or older (OP, $n=101$). Data on demographics, comorbidities, tumor features, surgical approach, complications, and survival were analyzed. Mean follow-up was 50.1 months for NOP and 38.4 months for OP.

Results: Mean age was 62.2 years in NOP and 76.9 years in OP. Cardiovascular disease was more frequent in OP (18.8% vs 8.6%, $p<0.05$). OP had higher rates of cervical infiltration (38.6% vs 19.0%, $p=0.002$), lymphovascular invasion (29.7% vs 15.2%, $p=0.009$), and deep myometrial invasion (64.4% vs 43.8%, $p=0.003$). Laparotomy was performed in 96.6% of patients. Postoperative complications were not significantly different (29.7% OP vs 21.0% NOP, $p=0.154$), but hospital stay was longer in OP ($p=0.005$). Five-year overall and progression-free survival were significantly lower in OP ($p<0.001$).

Conclusion: Chronological age should not be the sole determinant in EC treatment decisions. Elderly patients did not experience significantly more perioperative complications. Comprehensive geriatric assessment and individualized care planning are essential.

Keywords: Endometrial Cancer, Elderly Patients, Surgical Complications, Survival Outcomes, Lymphadenectomy

1. Introduction

Endometrial cancer (EC) is the most common gynecological cancer in developed countries and the fourth most common malignancy after breast, colon, and lung cancers [1-3]. The incidence of EC peaks between the ages of 60 and 70, but 2 to 5% of cases occur before the age of 40 [4]. With increasing life expectancy in developed countries, the elderly population is expected to grow, leading to a continued rise in the incidence of endometrial cancer [3,5,6]. On the other hand, it is observed that the rising prevalence of obesity, declining use of menopausal hormone therapy with

progestatives, increasing prevalence of diabetes, and changes in reproductive behaviors (e.g., an increasing prevalence of nulliparity) have also contributed to the increased prevalence endometrial cancer [7,8]. Surgery is the primary treatment for EC at any age. According to the International Federation of Gynecology and Obstetrics (FIGO) staging guidelines, the recommended procedure involves total abdominal hysterectomy, bilateral salpingo-oophorectomy, and, in certain cases, lymphadenectomy and omentectomy [9,10]. Hence, with the increasing number of elderly patients with EC, gynecologic oncologists will encounter age-

associated challenges in the treatment and management of the endometrial cancer. These older patients often present with more aggressive disease characteristics, including histological type, immuno histological profile, tumor grade, and FIGO stage at diagnosis [11,12]. On the other hand, advanced age is also frequently associated with multiple comorbidities. Literature data reveal that the functional reserve of patients tends to decrease with age and further deteriorates due to chronic illness, thereby increasing the incidence of comorbidities, which can compromise surgical outcomes [13]. Given that surgery can be complicated by these factors, despite the higher incidence of high-risk EC in older patients, literature data reveals that older patients are often offered less aggressive surgical treatment, with lymphadenectomy (LND) being omitted more frequently, and adjuvant treatment being less common [14-16]. Mains and Magnus reported that major complications occur more frequently in elderly patients undergoing gynecologic oncology surgery, leading to an increased morbidity rate [17].

Nowadays, limited evidence exists comparing perioperative and postoperative outcomes between older and younger patients, making the benefit of applying complex procedures to older women controversial. Thus, the management of this subgroup of patients remains highly heterogeneous among different institutions, highlighting the need to standardize management practices and avoid non-objective decisions that could impact prognosis. The aim of the present study is to compare perioperative morbidity and mortality differences between elderly (≥ 70 years old) and younger women (<70 years old) undergoing gynecologic oncological surgery for endometrial cancer. This aims to assess whether age, as an isolated factor, should be a limitation for performing complete staging surgery.

2. Methods

This is a retrospective, single-center observational study that includes women undergoing surgery and postoperative follow-up for endometrial cancer between January 2017 and December 2018 at Instituto Português de Oncologia de Lisboa Francisco Gentil in Lisbon, Portugal. All women who underwent surgery for endometrial cancer, with diagnoses confirmed by expert gynecologic pathologists, were included in the study. Patients with incomplete medical reports or synchronous non-gynecologic cancers were excluded. Additionally, women with synchronous ovarian or breast cancer and those undergoing a second laparotomy due to recurrent disease were also excluded. The study cohort was divided into two groups based on women's age at the time of surgery: those younger than 70 years, (the non-older patients - NOP group) and those aged 70 years or older, (the older patients - OP group), all treated at our institution during the same period. All patients included in the study underwent preoperative assessment, which included MRI and transvaginal ultrasound (TV-US) performed by an expert gynecologic-sonographer. In cases of high-risk tumors or when advanced disease was suspected, the study protocol was extended to include a thoracic CT scan. The

stage, which determined the type of surgery, was established based on the staging criteria of the FIGO from 2009 [10]. Subsequently, re-staging was performed according to the updated 2023 FIGO criteria [9]. All patients underwent a hysterectomy and bilateral salpingo-oophorectomy. The decision to perform complete staging surgery with pelvic and para-aortic lymphadenectomy was made on a case-by-case basis. Lymphadenectomy was performed in all women, except for those whose preoperative clinical-pathological assessment indicated a well-differentiated tumor or a depth of myometrial invasion less than 50%. Additionally, lymphadenectomy was avoided in cases involving patients aged >75 years, with a BMI of >30 , or with a poor performance status or major operative risk. Surgery could also involve lymph node sampling, based on the criteria of the responsible surgeon, if lymphadenectomy was not performed. The operative procedures were carried out by at least two surgeons, both of whom were experienced gynecologic oncologists. All cases of stage III/IV endometrial cancer were discussed in a multidisciplinary tumor board, which assessed the feasibility of complete tumor removal in primary debulking surgery based on imaging (transvaginal ultrasound, CT scan, and pelvic-abdominal MRI) and the overall health condition of the patient. If the tumor board consensus was that macroscopic tumor complete resection was feasible with acceptable morbidity, patients were offered primary debulking surgery. If the consensus was that macroscopic tumor could not be completely removed without a high risk of major complications, patients were offered neo-adjuvant treatment.

Data were collected from electronic patient charts, and anonymized information was entered into an electronic database. Information regarding age, comorbidities, body mass index (BMI; in kg/m²), ASA status (American Society of Anesthesiology physical status classes), disease stage (according to the International Federation of Gynecology and Obstetrics [FIGO]), histological grade, and other relevant prognostic factors (such as tumor grade of differentiation, myometrial invasion, isthmus involvement, and lymphovascular invasion) were reviewed. Surgical procedures, the occurrence of operative and early postoperative complications (within 30 days after surgery), postoperative hospital stay (in days), adjuvant treatments and long-term disease-specific survival (in months) were also documented.

Follow-up information was obtained from patients' outpatient gynecologic oncologic records, including follow-up after surgery (in years), recurrences (location and time after surgery), and the number of deaths. Tumor staging was determined based on final pathology reports and classified according to the FIGO guidelines [10]. Perioperative morbidity was defined as any medical complication occurring from the beginning of anesthesia up to 30 days after the surgical procedure. Major morbidity was defined as the occurrence of one of the following events during this period: any complication requiring reoperation, deep vein thrombosis or thromboembolic, sepsis, major cardiac

events, the need for massive transfusion, or pneumonia. Perioperative mortality was defined as death occurring from the beginning of anesthesia up to 30 days after the surgical procedure.

3. Statistical Analysis

Descriptive parameters were expressed as mean (SD). Frequencies were presented as percentages. The Student t-test was used to compute numeric variables. Fisher's exact test or the χ^2 test was used as appropriate to compare frequencies. Stepwise logistic regression was used to evaluate the variables predicting perioperative morbidity. Survival probability data were computed using the Kaplan-Meier method, and differences between the groups were calculated using the log-rank test. Only patients who died of endometrial cancer, and not of other causes, were included in the survival studies. Calculations were performed using SPSS software version 28 for Windows. A p-value < 0.05 was considered statistically significant. The study protocol received approval from the hospital's ethics committee.

4. Results

4.1. Patient characteristics

Between 2017 and 2018, 220 patients were diagnosed with EC. They all underwent primary surgery at the Gynecologic

Department of our Institute. Fourteen patients were excluded because: three patients had synchronous non-gynecologic cancers; four patients had synchronous ovarian or breast cancer. Seven patients were excluded from the study because we did not have complete information about the surgical related complications. Ultimately, 206 patients underwent primary surgery and were included in our study. The flow chart is presented in Figure 1.

In total, 105 patients were younger than 70 years (NOP group) while 101 were 70 and older (OP group). The mean age at diagnosis in each group was 62,2 (\pm 5,64) and 76,95 (\pm 5,11) respectively ($p < 0,001$). Median Body Mass Index (BMI) was 30,7 kg/m² (range 15–54). No statistical difference was found in BMI. Regarding medical history, the elderly women had higher rate of cardiovascular disease ($n = 9$, 8,6% vs. $n = 19$, 18,8%; $p < 0,05$). There was a significantly higher proportion of family history in NOP than in OP ($n = 57$, 54,3% vs. $n = 36$, 35,6%; $p = 0,008$). Abnormal vaginal bleeding was the most common reason for the initial consultation in both groups. An ASA (American Society of Anesthesiology) score of 3–4 was more frequent in OP than in NOP although this difference was not statistically significant. The demographic characteristics and comorbidities of the study group patients are presented in Table 1.

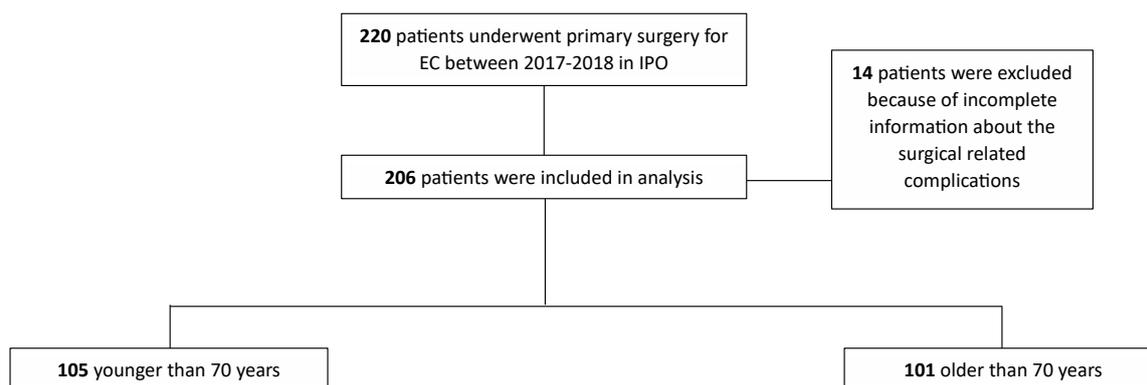


Figure 1: Flow Diagram Illustrating the Selection Process of the Study Population

	<70 years (n=105)	≥ 70 years (n=101)	Total (N=206)	p-value
Age (mean SD)	62,22 (5,64)	76,95 (5,11)	69,4	0,001
Menarche (mean SD)	12,15 (1,34)	12,33 (1,47)	12,2	0,387
Gestation (mean SD)	2,24 (1,25)	2,36 (1,64)	2,30	0,552
Parity (N %)				0,355
Nulliparous	9 (9,0%)	11 (11,1%)	20	
Primiparous	18 (18,0%)	25 (25,3%)	43	
Multiparous	73 (73,0%)	63 (63,6%)	116	
Postmenopausal	101 (96,2%)	101 (100,0%)	202	0,122
Hormone replacement therapy	5 (4,8%)	6 (5,9%)	11	0,764

Body Mass Index (N %)				0,635
Underweight	1(1,0%)	1 (1,0%)	2	
Normal	23 (21,9%)	13 (13,3%)	36	
Overweight	26 (24,8%)	32 (32,7%)	58	
Obese I	32 (30,5%)	32 (32,7%)	64	
Obese II	13 (12,4%)	12 (12,2%)	25	
Obese III	10 (9,5%)	8 (8,2%)	18	
BMI (mean SD)	30,74 (6,92)	30,74 (6,92)	30,7	0,925
Smoking (N %)	6 (5,7%)	1 (1,0%)	7	0,119
Medical history (N %)				
Hypertension	69 (65,7%)	78 (77,2%)	147	0,090
Diabetes	33 (31,4%)	31 (30,7%)	64	1,000
Coagulation disorders	2 (1,9%)	3 (3,0%)	5	0,678
Cardiovascular diseases	9 (8,6%)	19 (18,8%)	28	0,041
Liver diseases	1(1,0%)	1 (1,0%)	2	0,100
Gastrointestinal diseases	3 (2,9%)	2 (2,0%)	5	1,000
Others	41 (39,0%)	32 (31,7%)	73	0,309
Family history (N %)	57 (54,3%)	36 (35,6%)	93	0,008

Table 1: Patients' Characteristics

4.2. Tumour Characteristics

No differences were found regarding the histological type of EC between NOP and OP, being most of the patients diagnosed with Endometrioid subtype (n = 85, 81,0% and n = 73, 72,3%).

No significant differences were found between the two groups regarding tumour grade, tumour size and lymphovascular space invasion. The rates of cervical infiltration and

myometrial invasion >50% tended to be more frequent in the OP group (n = 20, 19,0% vs n = 39, 38,6%, p=0,002) (n = 46, 43,8% vs n = 65, 64,4%, p=0,003). There is a significantly higher proportion of lymphovascular invasion in OP group than in NOP group (n = 30, 29,7% vs n = 16, 15,2%, p=0,009) No differences were found in FIGO stage 2023 at diagnosis, being most of the patients (n = 93, 45,1%) diagnosed at FIGO stage I. Tumour characteristics are summarized in Table 2.

	<70 years (n=105)	≥ 70 years (n=101)	Total (N=206)	p-value
Reason for consultation (N, %)				
Abnormal vaginal bleed	96 (91,4%)	90 (89,1%)	186	0,642
Abdominal pain	2 (1,9%)	3 (3,0%)	5	0,678
Abdominal distension	0 (0,0%)	1 (1,0%)	1	0,490
Accidental finding	8 (7,6%)	9 (8,9%)	17	0,803
Polipectomy	0 (0,0%)	1 (1,0%)	1	0,490
ECOG score (N, %)				0,078
0	2 (1,9%)	0 (0,0%)	2	
1	85 (81,0%)	74 (73,3%)	159	
2	18 (17,1%)	27 (26,7%)	45	

ASA score (N, %)				0,129
1-2	87 (82,9%)	74 (73,3%)	161	
3-4	18 (17,1%)	27 (26,7%)	45	

Table 2: Clinical Data from the Consultation

4.3. Surgical Management

In total, 199 (96,6 %) of patients underwent laparotomy surgery. Minimally invasive surgery was more often performed in NOP compared with OP (n =5, 4,8% vs n = 2, 2,0% respectively). No patient underwent a vaginal approach. Hysterectomy along with bilateral adnexectomy was performed in all patients. Overall, lymphadenectomy

was performed in 61 patients. Regarding the extent of surgery, no differences were found in the frequency of lymphadenectomy between the two groups, although it was performed less often in the OP group than in the NOP group (n =25, 24,7% vs n = 36, 34,3% respectively). No differences were found in the performance of omentectomy. Surgical management is summarized in Table 3.

	<70 years (n=105)	≥ 70 years (n=101)	Total (N=206)	p-value
Histological Type (N, %)				0,137
Type 1- Endometrioid	85 (81,0%)	73 (72,3%)	158	
Type 2	20 (19,0%)	28 (27,7%)	48	
Mucinous	0 (0,0%)	3 (3,0%)	3	
Serous	7 (6,7%)	9 (8,9%)	16	
Clear Cell	4 (3,8%)	6 (5,9%)	10	
Mixed	2 (1,9%)	0 (0,0%)	2	
Undifferentiated	4 (3,8%)	2 (2,0%)	6	
Other	3 (2,9%)	8 (7,9%)	11	
Grade (N, %)				0,524
Grade 1	38 (36,2%)	31 (30,7%)	69	
Grade 2	31 (29,5%)	37 (36,6%)	68	
Grade 3	36 (34,3%)	33 (32,7%)	69	
Cervical infiltration	20 (19,0%)	39 (38,6%)	59	0,002
Lymphovascular space invasion	16 (15,2%)	30 (29,7%)	46	0,009
Myometrial invasion (N, %)				
<50%	59 (56,2%)	36 (35,6%)	95	0,003
≥ 50%	46 (43,8%)	65 (64,4%)	111	
Tumor size mm (mean, SD)	38,04 (19,6)	37,82 (21,7)	37,9	0,940
Positive pelvic lymph nodes (N, %)	7 (16,3%)	7 (23,3%)	14	0,550
Positive aortic lymph nodes (N, %)	3 (9,1%)	3 (16,7%)	6	0,652
FIGO STAGE 2009				0,204
I	74 (70,5%)	59 (58,4%)	133	

II	12 (11,4%)	22 (21,8%)	34	
III	13 (12,4%)	14 (13,9%)	27	
IV	6 (5,7%)	6 (5,9%)	12	
FIGO STAGE 2023				0,889
I	50 (49,0%)	43 (43,4%)	93	
II	33 (32,4%)	36 (36,4%)	69	
III	13 (12,7%)	14 (14,1%)	27	
IV	6 (5,9%)	6 (6,1%)	12	

Table 3: Tumour Characteristics

5. Intraoperative and Postoperative Complications

Although estimated blood loss was greater in patients in the NOP group compared to the OP group, this difference was not statistically significant. Blood transfusion was similar. The length of hospital stay was significantly longer in patients in the OP group compared to the NOP group (6,58 vs 4,77 days, $p=0,005$). Of 206 patients, intraoperative complications appeared in one patient (1,0%) in the NOP group and in three patients (3,0%) in the OP group ($p = 0,362$). here were two cases of vascular injuries associated with abundant blood loss requiring blood transfusion, one case of intraoperative bradycardia, and another of cardio-respiratory arrest in patients in the OP group. No statistical

differences were found in postoperative complications ($n = 22$, 21,0% in the NOP versus $n = 30$, 29,7% in the OP group, $p = 0,154$). The postoperative complications that occurred included paralytic ileus, intestinal obstruction, surgical wound infection, abdominal wall hematoma, suture dehiscence. hemoperitoneum, evisceration, thrombotic events, urinary tract infections, and abdominal hernias. There were also several cases of worsening pre-existing conditions in patients with comorbidities, especially in those in the OP group. Correlation between preoperative comorbidities and the rate of perioperative complications did not reach a statistical significance ($P = 0.09$). The rate of complications is summarized in Table 4.

	<70 years (n=105)	≥ 70 years (n=101)	Total (N=206)	p- value
Time from 1st consultation to surgery - months (mean SD)	2,30 (1,06)	2,46 (1,18)	2,37	0,339
Surgical approach				0,446
Laparoscopy (N, %)	5 (4,8%)	2 (2,0%)	7	
Laparotomy (N, %)	100 (95,2%)	99 (98,0%)	199	
Type of surgery (N, %)				
Total hysterectomy with bilateral salpingo-oophorectomy	62 (59,0%)	71 (70,3%)	133	0,109
Omentectomy	22 (21,2%)	23 (22,8%)	45	0,866
Pelvic sampling	1 (1,0%)	2 (2,9%)	3	0,616
Pelvic and Aortic sampling	5 (4,8%)	1 (1,0%)	6	0,212
Pelvic lymphadenectomy	9 (8,6%)	10 (9,9%)	19	0,812
Pelvic and Aortic lymphadenectomy	27 (25,7%)	15 (14,9%)	42	0,059
Estimated blood lost (mean SD)	1,83 (1,65)	1,74 (2,01)	1,79	0,760
Blood transfusion (N, %)	6 (5,7%)	10 (9,9%)	16	0,305
Complications (N, %)				
Intraoperative	1 (1,0%)	3 (3,0%)	4	0,362
PPostoperative	22 (21,0%)	30 (29,7%)	52	0,154

Surgical reintervention (N, %)	3 (2,9%)	3 (3,0%)	3	1,000
Hospital stay - days (mean SD)	4,77 (3,31)	6,58 (5,44)	5,67	0,005
Adjuvant treatment (N, %)	61 (58,1%)	59 (58,4%)	120	1,000
Brachithery	22 (21,0%)	22 (21,8%)	44	1,000
Chemotherapy	19 (18,1%)	14 (13,9%)	33	0,451
Radiotherapy	38 (36,2%)	34 (33,7%)	72	0,771
Hormonotherapy	0 (0,0%)	4 (4,0%)	4	0,56

Table 4: Surgical Management and Outcomes

	<70 years (n=105)	≥ 70 years (n=101)	Total (N=206)	p-value
Follow-up time (months, mean-SD)	50,10 (19,3%)	38,39 (23,42)	44,4	0,001
Events after leaving the hospital / Major morbidity / Overall complications (N, %)	5 (4,9%)	9 (9,2%)	14	0,275
Cancer Recurrence (N, %)	14 (13,3%)	23 (22,8%)	37	0,102
Recurrence time (months, mean-SD)	24,8 (20,9)	16,5 (12,0)	19,7	0,138
Local recurrence				
Lymph node	4 (3,8%)	7 (6,9%)	11	0,247
Others	9 (8,6%)	12 (11,9%)	21	0,494
Deaths / Mortality	14 (13,3%)	41 (40,6%)	55	0,001

Table 5: Follow-up Outcomes

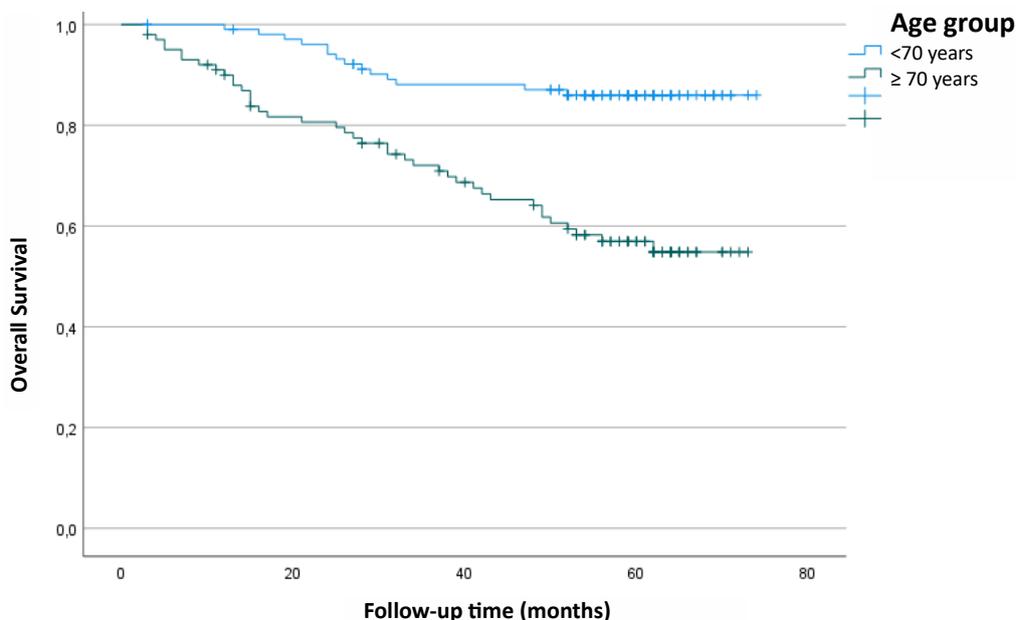


Figura 2: Overall survival

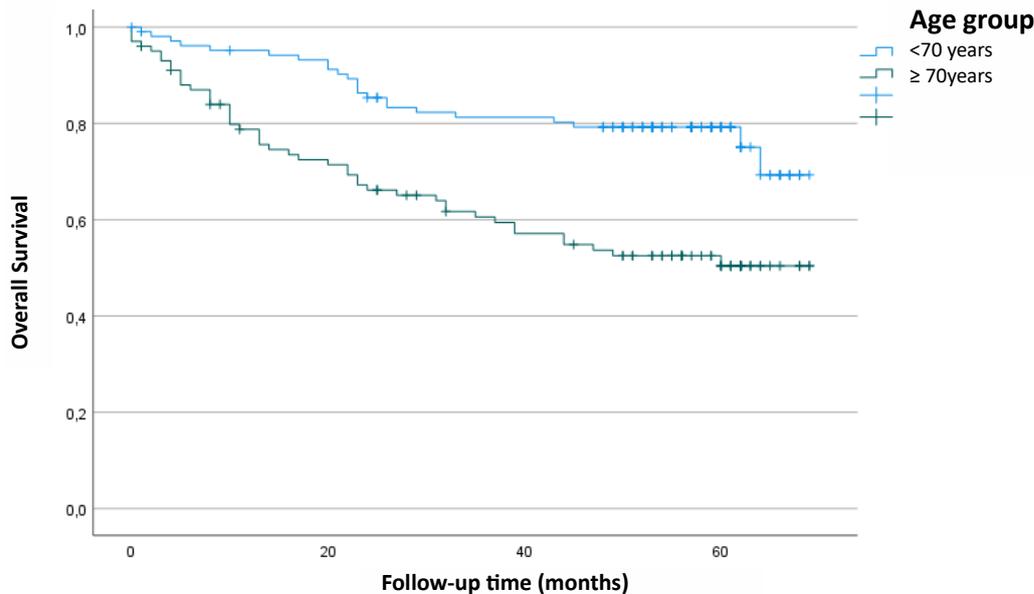


Figura 3: Disease-specific survival

6. Survival

A sub analysis of patients undergoing lymphadenectomy (n=61) found no relationship between lymphadenectomy and postoperative complications ($p = .596$), as well as no association with longer hospital stays (6,07 vs 5,03 days, $p = 0,065$). No differences were found in the administration of adjuvant treatment. Adjuvant treatment is summarized in Table 3. During a mean follow-up time of 50,1 vs 38,39 months in the NOP and OP respectively ($p = 0,001$). Fourteen mobility-related conditions were identified after treatment, among which proctitis, saphenous vein thrombosis, poly serositis, and paraneoplastic syndrome occurred more frequently. We found no differences in disease recurrence (13,3% of NOP and in 22,8% of OP recurred, $p = 0,102$) nor in the time until recurrence (24,8 vs 16,5 months, $p = 0,138$). The most frequent site of recurrence was the lymph nodes. Fifty-five of the 206 patients (26.7%) died within five years after surgery. Five years progression-free survival (PFS) was lower in the OP group (44,7 months) compared to their younger counterparts (58,3 months), $p < 0,001$. Additionally, 5-years overall survival was lower in the OP group (52,9 months) compared to the NOP group (67,5 months), $p < 0,001$. Survival was also found to be significantly higher in patients who underwent hysterectomy and adnexectomy alone compared to those who underwent sampling ($p = 0.013$), and significantly higher in those who underwent lymphadenectomy compared to those who underwent sampling ($p = 0.048$). The differences in survival based on BMI and personal history were not statistically significant ($p > 0.05$ and $p = 0.068$, respectively). On the other hand, survival was significantly higher in patients with endometrioid histological type ($p \leq 0.001$) and in those who did not receive adjuvant therapy ($p = 0.007$).

7. Discussion

The treatment of elderly patients with gynecological cancer is a challenge by a lack of solid scientific evidence, as no established guidelines exist for this population [18,19]. As a

result, performing major complex surgeries, which carry an increased risk of morbidity, is often considered unacceptable in the elderly. While comorbidities in older women increase the risk of perioperative complications and mortality during and after surgery, avoiding surgery may result in reduced survival. The analysis from the present study revealed that, contrary to previous research, the elderly group did not have significantly more comorbidities compared to the younger group. It was found that more than half of the patients included in the study had a history of chronic diseases, and a statistically significant proportion of patients over 70 years old suffered from cardiovascular diseases.

Optimizing chronic diseases prior to surgery may have improved surgical outcomes, resulting in fewer complications and reducing the differences in outcomes between the two groups. These results support the importance of engaging an onco geriatrician in the management of these patients [20-22]. Multiple recent studies have shown the benefit of performing an onco geriatric evaluation to determine an optimal and personalized strategy balancing risks and benefits of each treatment in these frailer patients [23]. A recent study found that declines in health-related quality of life (HRQoL) at 12- and 24-months post-surgery were mainly linked to cumulative comorbidities rather than age. This suggests that an onco geriatric evaluation is a better predictor of surgical morbidity and post-surgery quality of life than age alone.

Although the ASA 3-4 classification is recognized as an independent factor associated with a higher rate of postoperative complications in patients over 70 years of age, as reported by Scambia. in their retrospective Italian study, no significant differences were found between the two groups in our study that could influence the results [24]. Most patients underwent laparotomy because it was the standard approach during the study period, as the laparoscopic technique was still in the transition phase. Since laparotomy

is a more invasive procedure, it may have affected the survival outcomes of older women. We found that older patients had a higher risk of cervical infiltration, invasion of the lymphovascular space, and higher rates of myometrial invasion greater than 50%, which is consistent with available data showing that older patients tend to have more aggressive tumors. The higher prevalence of more aggressive tumors and diseases in older patients may explain the common belief that perioperative morbidity and mortality rates are higher in this age group. However, nowadays controversy remains on whether the poorer prognosis of older women with EC is due to the presence of a more aggressive tumour [10,11], or to less optimal treatment, as it has been published that these women are less likely to receive complete treatment [13,14]. The literature suggests that the main reason patients do not receive the recommended treatment is that doctors hesitate to suggest it, likely due to concerns about complications in frail patients [15]. Under staging and suboptimal adjuvant treatment could potentially lead to a worse prognosis. Lymphadenectomies were performed in similar numbers in both groups (37.1% vs. 58.2%, $p = 0.001$), which differs from previous observations analysed the patterns of care of older women with high-risk endometrial cancer and reported that lymphadenectomies were performed only in 46% of women older than 80 years compared with 85% of women aged 65 years or younger ($p < 0.001$) [15,25]. These results were confirmed in a large retrospective study involving 20,468 patients with high-risk EC [26]. In both studies, the women compared were from an older age group than in our study, which may explain the divergent results and why we did not find statistically significant results. On the other hand, in our study, the number of patients undergoing this procedure was small in both groups, which may have contributed to the lack of statistically significant results. In most cases, endometrial cancer was diagnosed at an early stage, where lymphadenectomy is not recommended. Even in cases where the procedure was indicated, it was not always performed due to other factors.

Regarding the feasibility of lymphadenectomy, Giannice et al. [26]. in a recent report, demonstrated that including lymphadenectomy in the surgical management of elderly patients does not significantly increase surgical morbidity. Therefore, advanced chronological age alone should not be considered a contraindication for full surgical treatment in these patients. Looking at the number of intraoperative and postoperative complications, no differences were found between the two groups. Optimizing underlying chronic conditions in the older women may have contributed to the reduction in major complications. These rates, ranging from 17% to 48%, are consistent with findings from other large studies of elderly patients undergoing surgery for gynecologic cancers [24,27-29]. Our results are in line with those published by Bourgin et al. in their meta-analysis, which included multiple studies and demonstrated no differences in the rate of perioperative complications according to age groups, neither with robotic or laparoscopic approaches nor with laparotomic surgery [12,16,30-33]. Also, Vaknin et al [33] concurred with our finding. with our finding

that postoperative complications are not more frequent in the elderly population (>70 years old) compared with younger patients. In contrast, found a relatively high rate of morbidity following gynecologic surgery for the elderly patient, they concluded that postoperative complications occurred frequently among women older than 80 years who underwent gynecologic surgery and that the increased perioperative morbidity in the elderly should be considered when performing surgery on women in that age group. Most frequent complications were sepsis, hemorrhage, and dehiscence or wound infection. As in previous reports, it is also interesting to note that there were differences in the length of stay between OP and NOP (6.58 vs. 4.77 days, $p = 0.005$). This is a relatively long hospital stay, considering that most recent guidelines for Enhanced Recovery After Surgery (ERAS) emphasize the importance of early patient discharge.

In our study, the younger patient group showed significantly better disease-specific survival compared to the elderly group (5-year DSS of 40,6% vs 13,3% respectively, $p = 0,01$). This difference can be explained by variations in tumor biology and immunologic response between younger and older women [34]. Additionally, younger women tend to seek medical advice earlier than older women. The results of this study should be interpreted in light of its limitations. Although this study included patients from a tertiary centre, this is a retrospective single-center study. Among the strengths of our study, we have a relatively long follow-up period that allows us to evaluate survival outcomes, especially given that most of EC recurrences occur within the first 36 months. Second, all patients were operated on by experienced staff Gyneco-oncologists thus probably improving the perioperative morbidity and mortality rates. In conclusion, the study suggests that age alone should not limit complete surgical staging, as older women do not experience more perioperative complications than younger patients. These findings support standardizing treatment, using a validated screening tool, optimizing patients' conditions, and avoiding subjective decisions. Elderly patients should not be denied surgery based solely on age-related risk perceptions. Further studies and specific clinical guidelines focusing on the management of these patients are needed [35].

Conflict of Interest

The authors declare that they have no conflict of interest.

Each Author's Contribution to the Manuscript

Silvia Serrano, literature search, literature reading, manuscript writing Margarida Bernardino, data collection, literature search, literature reading, manuscript writing Ana Francisca Jorge, data collection, manuscript writing.

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