Appendix 1. Fagotti Scoring Algorithm

Tumor Characteristic	Score
Peritoneal carcinomatosis: Massive peritoneal involvement and/or miliary pattern of distribution	0 (not present) or 2 (present)
Diaphragmatic surface involvement: Widespread infiltrating carcinomatosis and/or confluent nodules to most of diaphragm surface	0 (not present) or 2 (present)
Mesenteric involvement: Large infiltrating nodules and/or involvement of the root of the mesentery based on limited movement of intestinal segments	0 (not present) or 2 (present)
Omental involvement: Tumor diffusion of the omentum up to the greater curvature of the stomach	0 (not present) or 2 (present)
Bowel involvement: Tumor infiltration of large or small bowel requiring intestinal resection (excludes rectosigmoid colon) and/or	0 (not present) or 2 (present)
Stomach involvement: Obvious tumor infiltration into gastric wall	0 (not present) or 2 (present)
Liver involvement: Liver surface lesions >2 cm in size	0 (not present) or 2 (present)

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Appendix 2. Laparoscopy Surgical Data

	All laparoscopy patients (n=215)
Laparoscopy time, median (minutes, range)	37 (6-179)
EBL, median (mL, range)	5 (0-150)
Entry method	
Direct optical entry	191 (89%)
Open trocar entry	11 (5%)
Unknown	13 (6%)
Abdominal access point	
LUQ	184 (86%)
Umbilical	14 (6%)
RUQ	1 (0.5%)
RLQ	1 (0.5%)
Suprapubic	2 (1%)
Unknown	13 (6%)
Complications	
GI trocar injury	5 (2%)
Port site metastases	10 (5%)
Wound	10 (5%)

EBL=Estimated blood loss, LUQ=left upper quadrant, RUQ=right upper quadrant, RLQ=right lower quadrant

Appendix 3. Clinical and Demographic Data on Entire Cohort by Subgroup Analysis

	No Scope/NACT (n=245)	Scope/NACT (n=102)	Primary Surgery (n=138)	p-value
Age in years, median (range)	67 (22-89)	62 (36-85)	62 (37-88)	<0.001
BMI, median (kg/m2, range)	27.2 (13.1-59.3)	28.4 (17.1-49.4)	26.1 (17.9-47.2)	0.42
Race				0.71
White	200 (85%)	89 (90%)	120 (87%)	
Black	22 (9%)	5 (5%)	10 (7%)	
Other	13 (6%)	5 (5%)	6 (4%)	
Missing	10	3	2	
ECOG				<0.001
0-1	154 (71%)	84 (88%)	120 (94%)	
2	40 (18%)	10 (10%)	7 (5%)	
3-4	23 (11%)	2 (2%)	1 (1%)	
Missing	28	6	10	
Charlson Comorbidity Index, median	3 (0-10)	3 (1-14)	3 (0-10)	<0.001
CA-125 at Dx, median (U/mL, range)	774 (9.7-45600)	749 (41.5-12472)	343 (10.9-11837)	<0.001
BRCA status				0.05
No mutation	124 (81%)	58 (84%)	66 (69%)	
BRCA 1	11 (7%)	8 (12%)	18 (19%)	
BRCA 2	14 (8%)	2 (3%)	6 (6%)	
VUS	6 (4%)	1 (1%)	5 (5%)	
Unknown	90	33	43	
Disease site				<0.001
Fallopian tube	6 (2%)	4 (4%)	8 (6%)	
Ovarian	181 (74%)	88 (86%)	116 (84%)	
Primary peritoneal	43 (18%)	10 (10%)	14 (10%)	
Mullerian NOS	15 (6%)	0 (0%)	0 (0%)	
Stage				<0.001
II	0 (0%)	0 (0%)	18 (13%)	
III	67 (27%)	80 (78%)	108 (78%)	
IVA	22 (9%)	9 (9%)	2 (1%)	
IVB	153 (64%)	13 (13%)	10 (7%)	
Histology				<0.001
Serous	200 (82%)	93 (91%)	108 (78%)	
Endometrioid	3 (1%)	0 (0%)	5 (4%)	
Mucinous	1 (0%)	0 (0%)	1 (1%)	
Clear cell	6 (2%)	5 (5%)	3 (2%)	
Adenoca NOS	23 (9%)	0 (0%)	2 (2%)	
Mixed	6 (2%)	2 (2%)	11 (8%)	

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Carcinosarcoma	6 (2%)	2 (2%)	8 (6%)	

Scope=Laparoscopy, NACT=Neoadjuvant chemotherapy, BMI=Body mass index, ECOG=Eastern Cooperative Oncology Group, Dx=diagnosis, VUS=Variant of uncertain significance, NOS=not otherwise specified, Adenoca=adenocarcinoma

*Percentages may not equal 100% due to rounding

Appendix 4. Surgical and Chemotherapy Data on Entire Cohort by Subgroup Analysis

	No Scope/NACT (n=245)	Scope/NACT (n=102)	Primary Surgery (n=138)	p-value
TRS				<0.001
Primary	0 (0%)	0 (0%)	138 (100%)	
Interval	155 (65%)	84 (82%)	0 (0%)	
No surgery	82 (35%)	18 (18%)	0 (0%)	
Missing	8	0	0	
Surgical approach				0.04
Open	139 (90%)	68 (83%)	129 (94%)	
Laparoscopy	14 (9%)	14 (17%)	8 (6%)	
Robotic	1 (1%)	0 (0%)	0 (0%)	
Missing	1	2	1	
OR time, median (minutes, range)	277 (147-937)	305 (180-688)	370 (160-798)	<0.001
LOS, median (days, range)	3 (0-25)	4 (0-43)	5 (0-30)	<0.001
EBL, median (mL, range)	200 (20-1750)	300 (25-6000)	500 (50-2600)	<0.001
Residual disease at TRS				0.25
R0	124 (81%)	62 (76%)	120 (88%)	
≤1 cm	14 (9%)	10 (12%)	9 (7%)	
>1 cm	15 (10%)	10 (12%)	8 (6%)	
Missing	2	2	1	
Number of chemotherapy cycles, median (range)				
NACT	3 (1-14)	3 (1-12)		0.20
Total cycles	6 (0-14)	6 (0-12)	6 (0-9)	0.009

Scope=Laparoscopy, NACT=Neoadjuvant chemotherapy, TRS=Tumor reductive surgery, LOS=Length of stay, EBL=Estimated blood loss, R0=no gross residual disease

Appendix 5. Tumor Reductive Surgical Procedures in Entire Cohort by Subgroup Analysis

	No Scope/NACT (n=155)	Scope/NACT (n=84)	Primary Surgery (n=138)	p-value
Surgical Procedures				
Hysterectomy	109 (47%)	61 (60%)	98 (71%)	<0.001
USO or BSO	140 (61%)	83 (80%)	130 (94%)	<0.001
Omentectomy	148 (64%)	79 (78%)	130 (94%)	<0.001
Diaphragm stripping	15 (7%)	8 (8%)	22 (16%)	0.008
Diaphragm resection	15 (7%)	8 (8%)	11 (8%)	0.71
Liver resection	17 (8%)	6 (6%)	13 (9%)	0.58
Peritoneal stripping	22 (10%)	16 (16%)	40 (29%)	<0.001
Splenectomy	11 (5%)	6 (6%)	11 (8%)	0.46
Partial pancreatectomy	4 (2%)	1 (1%)	0 (0%)	0.30
Pelvic lymphadenectomy	15 (6%)	2 (2%)	32 (23%)	<0.001
PA lymphadenectomy	21 (9%)	2 (2%)	41 (30%)	<0.001
Bowel procedures				
Appendectomy	22 (9%)	20 (19%)	37 (27%)	<0.001
End colostomy	3 (1%)	4 (4%)	7 (5%)	0.06
Right colon resection	6 (3%)	1 (1%)	7 (5%)	0.19
Ileostomy	2 (1%)	1 (1%)	10 (7%)	0.001
Partial gastric resection	2 (1%)	0 (0%)	2 (1%)	0.67
Posterior exenteration	2 (1%)	3 (3%)	12 (9%)	<0.001
Rectosigmoid resection	11 (5%)	11 (11%)	44 (32%)	<0.001
Small bowel resection	7 (3%)	3 (3%)	12 (9%)	0.04
Transverse colon resection	7 (3%)	5 (5%)	4 (3%)	0.57

USO=unilateral salpingoophorectomy, BSO=bilateral salpingoophorectomy, PA=para-aortic

*Percentages are based off of the number of patients undergoing tumor reductive surgery in each group

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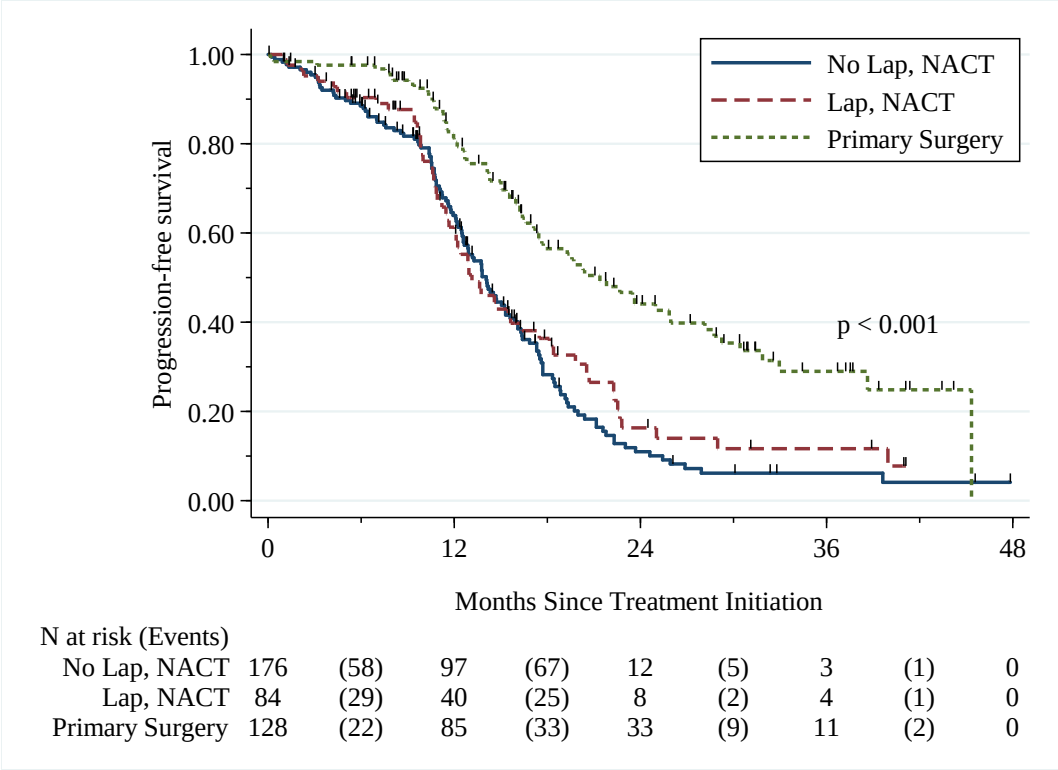
Appendix 6. Progression-free survival (PFS) in entire cohort by subgroup. Median PFS was 21.4 months for primary surgery compared to 14.1 months no laparoscopy-NACT and 13.1 months laparoscopy-NACT (*P*<.001). NACT, neoadjuvant chemotherapy.



N at risk (Events)									
No Lap, NACT	176	(58)	97	(67)	12	(5)	3	(1)	0
Lap, NACT	84	(29)	40	(25)	8	(2)	4	(1)	0
Primary Surgery	128	(22)	85	(33)	33	(9)	11	(2)	0

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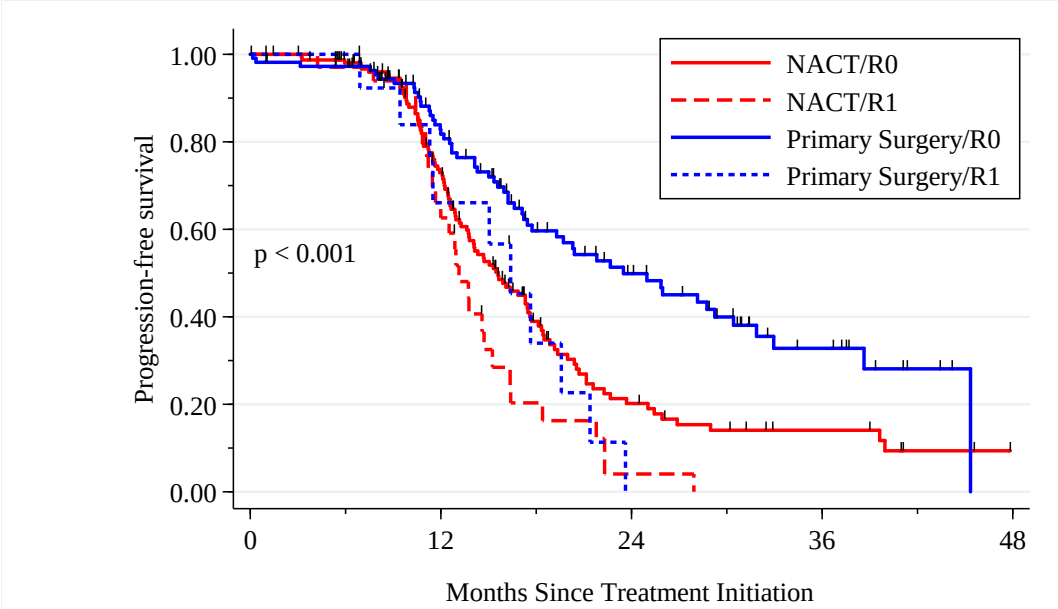
Appendix 7. Progression-free survival (PFS) in entire cohort by residual disease and subgroup. Median PFS was as follows: primary surgery-R0 23.5 months; primary surgery-R1 16.4 months; NACT-R0 15.6 months; NACT-R1 13.1 months (*P*<.001). NACT, neoadjuvant chemotherapy.



N at risk (Events)

NACT/R0	157	(37)	97	(58)	18	(5)	7	(2)	0
NACT/R1	34	(11)	18	(16)	1	(0)	0	(0)	0
Primary Surgery/R0	111	(18)	77	(26)	33	(9)	11	(2)	0
Primary Surgery/R1	16	(4)	7	(6)	0	(0)	0	(0)	0

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Appendix 8. Multivariate Analysis for PFS for Entire Cohort Based on Subgroup Analysis

	HR (95% CI)	p-value
Age at diagnosis	1.00 (0.98-1.03)	0.82
ECOG status	1.28 (1.02-1.61)	0.03
Charlson comorbidity index	1.06 (0.93-1.20)	0.37
Baseline CA-125	1.00 (1.00-1.00)	0.43
Baseline platelet count	1.00 (1.00-1.00)	0.06
Stage		
II	---	
III	2.14 (0.85-5.37)	0.11
IVA	2.68 (0.89-8.11)	0.08
IVB	2.15 (0.79-5.84)	0.14
BRCA status		
No mutation	---	
BRCA 1/2	0.66 (0.39-1.09)	0.11
Unknown	1.09 (0.75-1.59)	0.65
Resection status		
R0	---	
≤1 cm	2.03 (1.30-3.19)	0.002
>1 cm	1.26 (0.69-2.31)	0.45
Treatment group		
No Scope/NACT	---	
Scope/NACT	1.17 (0.73-1.87)	0.51
Primary surgery	0.88 (0.55-0.42)	0.61

ECOG=Eastern Cooperative Oncology Group, Scope=Laparoscopy, NACT=Neoadjuvant chemotherapy