

Clinicopathological Profile and Survival Outcomes of Epithelial Ovarian Carcinoma: A Two-Year Retrospective Study from a Tertiary Cancer Centre

Dr. Meshach J¹, Dr. V. Arumugam²

¹DM Resident, Department of Medical Oncology, Tirunelveli Medical College, Tirunelveli

Email: meshjm135[at]gmail.com

²Professor & Head, Department of Medical Oncology, Tirunelveli Medical College, Tirunelveli, India

Email: arumugamonco[at]gmail.com

Abstract: Epithelial ovarian carcinoma is commonly diagnosed at an advanced stage and carries a high risk of recurrence. This retrospective study evaluated the clinicopathological profile, treatment pattern, progression-free survival (PFS), and overall survival (OS) of patients with epithelial ovarian carcinoma evaluated at a tertiary cancer centre over two years. Among 109 ovarian tumor records from 2024-2025, 101 epithelial ovarian carcinoma cases were included after excluding eight non-epithelial tumors. Cases diagnosed by cytology/clinical-radiological correlation as malignant ovarian carcinoma were included as malignancy proven, subtype unspecified when tissue biopsy was not feasible. Defaulters were excluded from survival analysis, leaving 80 patients for Kaplan-Meier estimation. The median age was 55 years; 70 patients (69.3%) were postmenopausal and 82 (81.2%) had stage III-IV disease. Serous carcinoma was the most common histology (56.4%). Neoadjuvant chemotherapy was used in 60.4%, interval debulking surgery was performed in 27.7%, and any surgery was documented in 46.5%. Median PFS was 16 months; 12- and 24-month PFS were 62.5% and 45.8%, respectively. Median OS was not reached; 12- and 24-month OS were 89.1% and 76.7%, respectively. Advanced stage was associated with inferior PFS ($p=0.003$), and exploratory comparison showed poorer OS for stage IV compared with stage I-III disease ($p=0.019$). Most patients presented with advanced-stage disease. Stage remained the most consistent adverse prognostic factor, while OS requires longer follow-up for maturation.

Keywords: epithelial ovarian carcinoma; progression-free survival; overall survival; interval debulking surgery; residual disease; real-world outcomes

1. Introduction

Epithelial ovarian carcinoma (EOC) is the predominant ovarian malignancy and remains a major cause of gynecological cancer mortality.^{1,2} Because symptoms are often vague and effective population screening is lacking, many patients present with advanced-stage disease. Current management is based on cytoreductive surgery and platinum-taxane chemotherapy.^{2,3} For selected patients with bulky stage III-IV disease or poor initial operability, neoadjuvant chemotherapy followed by interval debulking surgery (IDS) is an accepted strategy, with complete macroscopic cytoreduction remaining an important therapeutic goal.^{3-5,7}

Real-world survival data from tertiary care centres are useful because patient profiles often include advanced disease, variable operability, incomplete tissue diagnosis in some poor performance status patients, and loss to follow-up. This study analyzed clinicopathological characteristics, treatment patterns, PFS, OS, and selected prognostic factors in a two-year cohort of epithelial ovarian carcinoma.

2. Methodology

This retrospective observational study reviewed ovarian tumor records from January 2024 to December 2025 at the Department of Medical Oncology, Tirunelveli Medical

College Hospital. Patients with epithelial ovarian carcinoma were included. Non-epithelial tumors such as germ cell tumor, granulosa cell tumor, sex-cord stromal tumor, and mature teratoma were excluded from the main carcinoma cohort. The variables collected included age, menopausal status, ECOG performance status, FIGO stage, histology, grade, ascites, chemotherapy exposure, number of chemotherapy lines, upfront surgery, neoadjuvant chemotherapy, IDS, residual disease, PFS, OS, and vital status. Cases reported as positive for malignancy or ascitic fluid positive were included as malignancy proven, subtype unspecified when biopsy was not feasible but clinical-radiological correlation supported ovarian malignancy. Residual disease was analysed only among operated patients

3. Statistical Methods

Categorical variables were summarized as numbers and percentages. Continuous variables were summarized as median. PFS was defined as the time from diagnosis/treatment initiation to progression, recurrence, death, or last follow-up. OS was defined as the time from diagnosis/treatment initiation to death from any cause or last follow-up. Defaulters or patients with unreliable follow-up were excluded from survival analysis. Survival probabilities were estimated using the Kaplan-Meier method and compared using the log-rank test. A p value less than 0.05 was considered statistically significant.

Volume 15 Issue 10, October 2026

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

www.ijsr.net

4. Results

A total of 109 ovarian tumor records were screened. Eight non-epithelial ovarian tumors were excluded, leaving 101 patients in the epithelial ovarian carcinoma cohort. Twenty-one defaulters were excluded from survival analysis; the final survival cohort included 80 patients.

Table 1: Clinical characteristics of the epithelial ovarian carcinoma cohort (n=101).

Variable	Subgroup	Number (%)
Age	Median age	55 years
Menopausal status	Postmenopausal	70 (69.3%)
	Premenopausal	27 (26.7%)
	Not specified	4 (4.0%)
ECOG performance status	ECOG 1	36 (35.6%)
	ECOG 2	61 (60.4%)
	ECOG 3	4 (4.0%)
FIGO stage	Stage I	15 (14.9%)
	Stage II	4 (4.0%)
	Stage III	57 (56.4%)
	Stage IV	25 (24.8%)
Stage group	Early stage (I-II)	19 (18.8%)
	Advanced stage (III-IV)	82 (81.2%)
Histology	Serous carcinoma	57 (56.4%)
	Malignancy proven, subtype not specified	29 (28.7%)
	Mucinous carcinoma	8 (7.9%)
	Adenocarcinoma NOS	3 (3.0%)
	Endometrioid carcinoma	2 (2.0%)
	Clear cell / undifferentiated carcinoma	2 (2.0%)
Grade	High grade	58 (57.4%)
	Low/intermediate/borderline	6 (5.9%)
	Not specified	37 (36.6%)
Ascites	Present	38 (37.6%)

Most patients had advanced disease at presentation. Stage III-IV disease accounted for 82/101 (81.2%) patients, with stage IIIC being the single largest subgroup. Serous carcinoma was the commonest histology, while 29 patients were classified as malignancy proven, subtype not specified because tissue biopsy could not be performed in several clinically advanced cases.

Table 2: Treatment profile and response pattern (n=101)

Variable	Subgroup	Number (%)
Upfront surgery	Yes	19 (18.8%)
	No	82 (81.2%)
Neoadjuvant chemotherapy	Yes	61 (60.4%)
	No	40 (39.6%)
Palliative chemotherapy	Yes	36 (35.6%)
Interval debulking surgery	Yes	28 (27.7%)
	No/inoperable	73 (72.3%)
Any surgery	Yes	47 (46.5%)
	No	54 (53.5%)
Residual disease among full cohort	R0 / no gross residual disease	16 (15.8%)
	Residual disease present	30 (29.7%)
	Not applicable - not	54 (53.5%)

	operated	
Chemotherapy lines	0 lines	17 (16.8%)
	1 line	42 (41.6%)
	2 lines	24 (23.8%)
	>=3 lines	18 (17.8%)
Response/progression	Complete response	13 (12.9%)
	Partial response	35 (34.7%)
	Progressive disease	34 (33.7%)
	Stable disease	19 (15.8%)

Table 3: Survival outcomes in the final analyzable cohort (n=80).

Endpoint	N	Events	Median	12-month estimate	24-month estimate
Progression-free survival	80	38	16 months	62.5%	45.8%
Overall survival	80	13	Not reached	89.1%	76.7%

At the time of analysis, 38 PFS events and 13 deaths were documented in the survival cohort. Median PFS was 16 months, whereas median OS was not reached. The 12- and 24-month PFS were 62.5% and 45.8%, respectively. The 12- and 24-month OS were 89.1% and 76.7%, respectively.

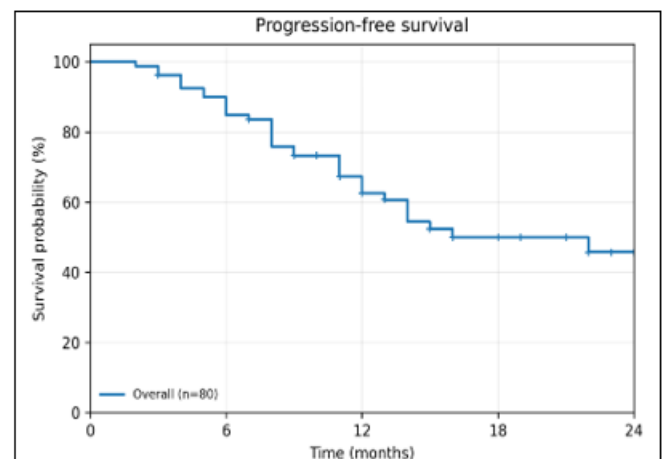


Figure 2: Kaplan-Meier curve for progression-free survival. Median PFS was 16 months; 12- and 24-month PFS were 62.5% and 45.8%

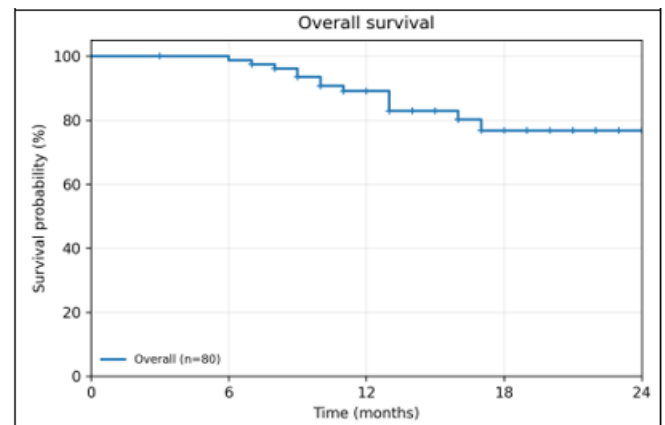


Figure 3: Kaplan-Meier curve for overall survival. Median OS was not reached; 12- and 24-month OS were 89.1% and 76.7%

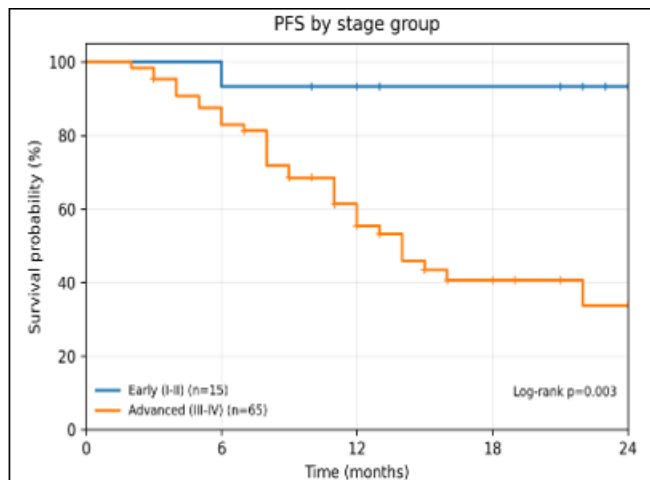


Figure 4: PFS by stage group. Advanced-stage disease was associated with inferior PFS (log-rank $p=0.003$).

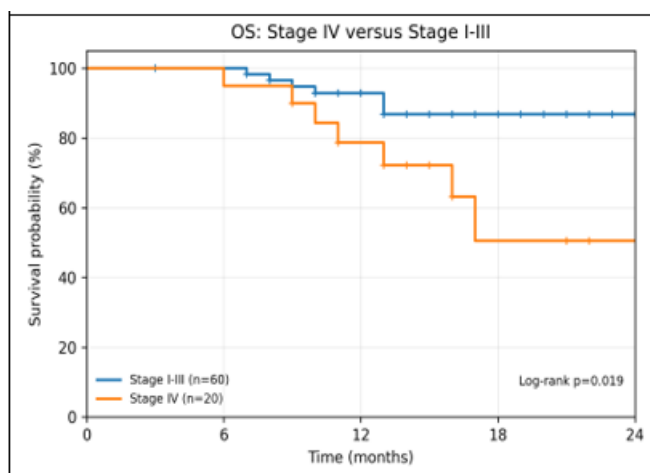


Figure 5: OS by stage IV versus stage I-III disease. Stage IV disease showed inferior OS in exploratory analysis (log-rank $p=0.019$).

5. Discussion

This two-year retrospective study shows that epithelial ovarian carcinoma in our setting is predominantly an advanced-stage disease. More than four-fifths of patients had stage III-IV disease, and serous carcinoma was the most frequent histology. A substantial proportion had malignancy proven without sub typing, reflecting real-world limitations in obtaining tissue biopsy in patients with advanced disease, poor performance status, or inaccessible disease.

The median PFS of 16 months is consistent with the high burden of advanced-stage disease and the real-world nature of the cohort. OS was not reached because the follow-up is still short and only 13 deaths were observed after excluding defaulters. Therefore, OS results should be interpreted as early survival estimates rather than mature long-term outcomes.

Stage was the strongest and most consistent prognostic factor. Advanced-stage disease was associated with inferior PFS. The early versus advanced OS comparison was not statistically

significant, probably because the number of deaths was small; however, stage IV disease had significantly poorer OS compared with stage I-III disease in exploratory analysis. This finding is biologically plausible and clinically useful, but it requires longer follow-up for confirmation.

Patients who underwent surgery appeared to have better PFS and OS, but this cannot be interpreted as a pure treatment effect in a retrospective dataset. Surgical candidacy depends on performance status, disease extent, response to neoadjuvant chemotherapy, and feasibility of cytoreduction.^{3,6,7} Residual disease did not show a statistically significant difference in this cohort, possibly due to small operated subgroup size and incomplete maturity of events.^{6,7}

The strengths of this study are the consecutive two-year real-world cohort, clear exclusion of non-epithelial tumors, explicit handling of defaulters, and Kaplan-Meier survival estimation. Limitations include retrospective design, single-centre data, incomplete histological subtyping in cytology-positive cases, lack of uniform molecular testing such as BRCA/HRD, treatment heterogeneity, and short follow-up for OS.^{3,8}

6. Conclusion

In this real-world two-year cohort of epithelial ovarian carcinoma, most patients presented with advanced-stage disease. Median PFS was 16 months, while median OS was not reached. Advanced stage was associated with inferior PFS, and stage IV disease showed poorer OS compared with stage I-III disease. Longer follow-up, improved histological and molecular characterization, and larger multicentre datasets are needed to refine survival estimates and prognostic stratification.

References

- [1] Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2024; 74: 229-263.
- [2] Lheureux S, Gourley C, Vergote I, Oza AM. Epithelial ovarian cancer. *Lancet.* 2019; 393: 1240-1253.
- [3] González-Martín A, Harter P, Leary A, Lorusso D, Miller RE, Pothuri B, et al. Newly diagnosed and relapsed epithelial ovarian cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up. *Ann Oncol.* 2023; 34: 833-848.
- [4] Vergote I, Tropé CG, Amant F, Kristensen GB, Ehlen T, Johnson N, et al. Neoadjuvant chemotherapy or primary surgery in stage IIIC or IV ovarian cancer. *N Engl J Med.* 2010; 363: 943-953.
- [5] Kehoe S, Hook J, Nankivell M, Jayson GC, Kitchener H, Lopes T, et al. Primary chemotherapy versus primary surgery for newly diagnosed advanced ovarian cancer (CHORUS): an open-label, randomised, controlled, non-inferiority trial. *Lancet.* 2015; 386: 249-257.

- [6] du Bois A, Reuss A, Pujade-Lauraine E, Harter P, Ray-Coquard I, Pfisterer J. Role of surgical outcome as prognostic factor in advanced epithelial ovarian cancer: a combined exploratory analysis of three prospectively randomized phase 3 multicenter trials. *Cancer*. 2009; 115: 1234-1244.
- [7] Winter WE 3rd, Maxwell GL, Tian C, Carlson JW, Ozols RF, Rose PG, et al. Tumor residual after surgical cytoreduction in prediction of clinical outcome in stage IV epithelial ovarian cancer: a Gynecologic Oncology Group Study. *J Clin Oncol*. 2008; 26: 83-89.
- [8] Nag S, Banerjee S, Fujiwara K, Friedlander M, Kim JW, Kim YT, et al. Pan-Asia adapted ESMO Clinical Practice Guideline for the management of patients with newly diagnosed and relapsed epithelial ovarian cancer. *ESMO Open*. 2025.