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Original Research Article

Outcomes of surgery in epithelial ovarian cancer: our experience

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ABSTRACT

Background: Comprehensive surgical staging and surgical cytoreduction is the primary modality of treatment in early and advanced epithelial ovarian cancer respectively, followed by systemic chemotherapy in most of the patients. The aim of the present study was to evaluate the role of surgery and its impact on disease free and overall survival in patients with epithelial ovarian cancer.
Methods: A retrospective analysis of 38 patients of biopsy proven epithelial ovarian cancer was performed. Patient's demographic data, details of surgical procedure, post-operative complications, histopathological findings, staging and pattern of recurrence were collected from the medical records.
Results: Six (15.8%) patients had early disease (stage I-II) at presentation while 30 (94.7%) patients advanced disease (stage III-IV). Staging laparotomy was done in six (15.8%) patients, primary cytoreduction in eight (21.05%) patients, interval cytoreduction in 17 (81.6%) patients and secondary cytoreduction in two (5.3%) patients. Five (13.2%) patients were inoperable. The median follow up time was in the range of 2 to 56 months (median 26 months). The three years overall survival in advanced stage was 73.74%. Disease free survivals in primary and interval cytoreduction groups were 80% and 58.67% respectively. The disease free survival in patients with optimal cytoreduction was 72.9%.
Conclusions: The present study indicates that in the majority of patients with advanced ovarian cancer, surgery can lead to optimal cytoreduction with acceptable disease-free and overall survival.

Keywords: Epithelial ovarian cancer, Cytoreduction, Survival

INTRODUCTION

Surgery is usually the initial treatment for women with suspected ovarian cancer. Accurate surgical staging and optimal tumour cytoreduction followed by platinum-based chemotherapy is the standard of care in the management of this disease and results in improved patient survival. Identification of patients with early stage disease remains the greatest challenge in ovarian cancer. The diagnosis of ovarian cancer among patients with a pelvic mass is aided by the imaging characteristics of the mass and the preoperative serum CA-125 level.

The role of the primary surgical procedure was to establish diagnosis, assess the extent of disease, and remove as much gross tumour as possible. Although 75% of women with epithelial ovarian cancer will present with advanced disease, it is critical that the 25% of women diagnosed with early-stage disease undergo a comprehensive surgical staging procedure. Comphrensive surgical staging results in "Will Rogers" phenomenon i.e., stage migration from early stage to the advanced stage by identification of subclinical metastasis.[1] In advanced cases cytoreductive surgery is the initial treatment for all potentially resectable lesions. The aim

was to achieve maximal cytoreduction to less than 1 cm of residual disease.[2]

The value of cytoreductive surgery was first recognized by Meigs in 1934 and validated by Griffiths in 1975.[3] Multiple retrospective studies have demonstrated that the amount of residual tumor after cytoreductive surgery correlates inversely with progression-free and overall survival.[4-7] A recent meta-analyses has demonstrated that with each 10% increase in maximal cytoreduction, a 5.5-6.0% increase in median survival time is achieved.[8,9] The gynecologic oncology group (GOG) currently defines "optimal" as having residual tumour nodules each measuring 1 cm or less in maximum diameter. This definition is likely to evolve given that increasing data demonstrates a further increase in survival for patients undergoing cytoreduction to less than 0.5 cm or no gross remaining disease.[9,10]

The aim of the present study was to evaluate the role of surgery and its impact on disease free and overall survival in patients with epithelial ovarian cancer.

METHODS

A retrospective analysis of 38 patients of biopsy proven epithelial ovarian cancer operated at Shrimati Kashibai Navale Medical College and General Hospital, Narhe, Pune was done. Patient's demographic data, details of surgical procedure, post-operative complications, histopathological findings, staging and pattern of recurrence were collected from the medical records of all patients operated from Janurary 2012 till December 2017. Comparisons of survival time between strata of categorical variables were made with the Kaplan-Meier method and log-rank test. All computations were performed using SPSS statistical software version 11.0.

RESULTS

The age of patients ranged from 30 to 78 years (mean age 50.65 years).

Stage of disease

Three patients (7.9%) had stage I disease, 03 (7.9%) patients had stage II disease, 29 (76.3%) patients had stage III disease and 01 (2.6%) patient had stage IV disease. In 02 (5.2%) patients the details of the disease was not known as these patients were operated elsewhere and the details of the surgery was not known (Figure 1).

Type of surgery

Staging laparotomy was done in 06 (15.8%) patients, primary cytoreduction in 08 (21.05%) patients, interval cytoreduction in 17 (81.6%) patients, secondary cytoreduction in 02 (5.3%) patients and in 05 (13.2%) patients the disease was inoperable (Figure 2).

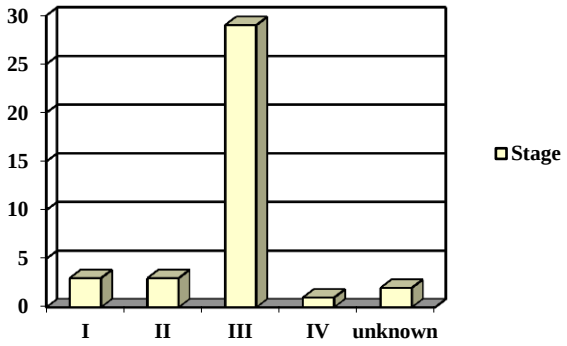

Figure 1: Stage of disease.

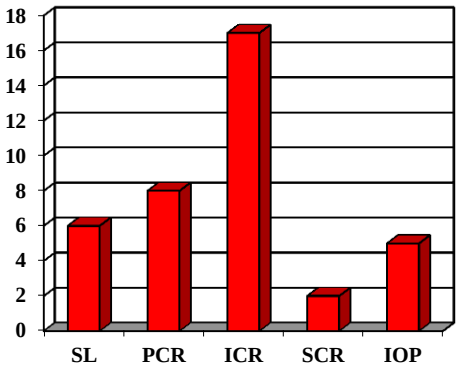

Figure 2: Type of surgery.

Optimal cytoreduction

Optimal cytoreduction was defined as no residual disease or residual disease less than 1 cm. In 27 (70.05%) patients optimal cytoreduction was achieved while in 5 (13.2%) patients optimal cytoreduction was not achieved.

Multivisceral resection

Multivisceral resection was done in 4 (10.5%) patients. Out of these four patients, large bowel resection (sigmoid colectomy) was done in 3 patients and 1 patient required small bowel (ileal resection).

Histology

Serous adenocarcinoma was seen in 28 (73.7%) patients, mucinous adenocarcinoma in 02 (5.3%) patients, endometroid adenocarcinoma in 04 (10.5%) patients, clear cell carcinoma in 01 (2.6%) patient and undifferentiated adenocarcinoma in 03 (7.9%) patients.

Tumour grade

Grade I tumour was seen in 01 (2.6%) patient, grade II in 08 (21.1%) patients, grade III in 18 (47.4%) patients and in 11 (28.9%) patients the tumour grade was not known.

Post-operative complications

Post-operative complications were seen in 8 patients (21.1%) with pneumonitis in 5 patients and wound infection in 3 patients.

Hospital stay

The length of hospital stay ranged from 5 to12 days with a mean of 8.5 days. All patients who underwent interval cytoreduction had completed their chemotherapy schedule as per the protocol (carboplatin+ paclitaxel).

Follow up

Follow up data was obtained from the medical records and contacting the patient or her family member. The follow up range was 2 months to 56 months with a median follow up of 26 months.

Disease status during follow up

The data from regular follow up visits were recorded and it was found that 18 (47.4%) patients were free of disease, 07 (18.4%) patients had progressive disease, 04 (10.5%) patients developed local recurrence, 02 (5.3%) patients had systemic relapse, 02 (5.3%) had local and systemic relapse and in 05 (13.2%) patients the disease status was not known.

Patient's status at the last follows up

The details of the patients during the last visit was taken from the records and it was noted that 19 (50%) patients were alive and disease free, 06 (15.8%) patients were alive with disease, 05 (13.2%) patients died due to the disease while 08 (21.1%) patients lost follow up.

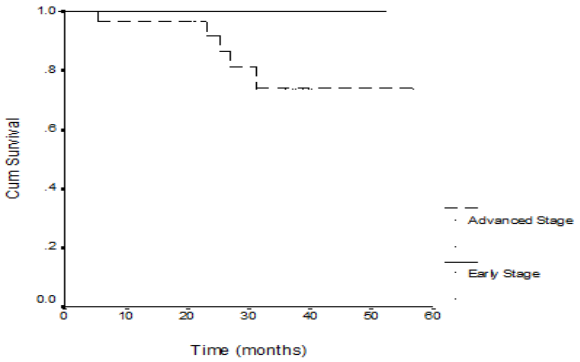

Figure 3: The 3 year overall survival in advanced stage.

Survival

The disease free survival in primary and interval cytoreduction was 80% and 58.67 % respectively. The disease free survival in patients with optimal cytoreduction was 72.9%. The 3 year overall survival in advanced stage was 73.74 % (Figure 3-5).

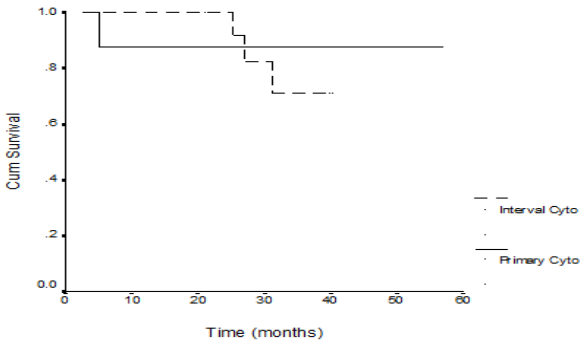

Figure 4: The disease free survival in primary and interval cytoreduction.

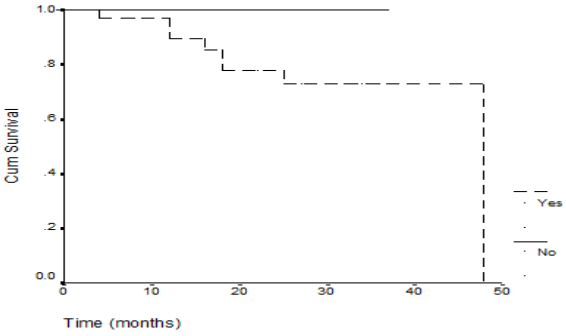

Figure 5: The disease free survival in patients with optimal cytoreduction (yes/no).

DISCUSSION

The median age of diagnosis for ovarian cancer is 63 years and for all women the combined incidence peaks in the late 70s for epithelial tumors.[11,12] In our study the mean age was 50.65 years which is a decade earlier. The exact reason for this age difference is not known; however, this could be a reflection of the overall demographic profile of Indian population with a relatively younger population than the west. Most of the patients with epithelial ovarian cancer present with advanced stage which is consistent with our study in which most of the patients belonged to stage III disease.[13]

Interval cytoreduction was the most common surgery 17 (81.6%) done followed by primary cytoreduction 08 (21.05%) because most of these patients were advanced and were referred to our hospital after prior sub optimal surgery. The European Organisation for Research and Treatment of Cancer study has showed a clear survival advantage for interval debulking while, the GOG-152 study, failed to show any benefit from interval debulking.[14,15] The disease free survival in primary and interval cytoreduction was 80% and 58.67% respectively in our study.

Patients with optimal cytoreduction had better disease free survival than those who had residual disease. In 27 (70.05%) patients optimal cytoreduction was achieved while in 5 (13.2%) patients optimal cytoreduction was not achieved. In our study maximum cytoreduction was achieved because the surgery was performed by oncosurgeon.

As per reported literature, 5-year survival rate in cases of advanced ovarian cancers is 30-55%.[16] In our study the 3 year overall survival in advanced stages was 73.74%. Our study showed high survival because some of the patients were operated elsewhere and were incompletely staged. These patients received chemotherapy instead of restaging surgery as per the data from the patients' files. There could be a possibility that some of the early ovarian carcinoma patients were inappropriately categorized as advanced ovarian cancer patients. Some of the advanced stage patients had lost follows up so their disease status was not known.

Sigmoid colectomy was the most common multivisceral resection which is consistent in reported series of Hoffman et al.[17] There was no major post-operative complications and no perioperative mortality in our study. The length of hospital stay ranged from 5 to 12 days with a mean of 8.5 days. Most of our study patients were started on adjuvant chemotherapy by the third week however it did not show any benefit in terms of survival as reported by some studies. Hofstetter et al showed that the time interval from surgery to initiation of chemotherapy significantly correlated with overall survival in patients with postoperative residual disease.[18]

The predictive factors for long-term survival in patients with advanced ovarian cancer are International Federation of Gynecology and Obstetrics stage, histology type, grade, age and residual disease after surgery.[19,20] In our study, multivariate analysis of all these factors showed no prognostic significance.

Limitation

Our study is a retrospective analysis based on medical records of operated patients of epithelial ovarian cancer that involved a small study group with heterogeneous patient's characteristics and a short follow up period.

CONCLUSION

This study shows that we achieved high rates of optimal cytoreduction with no gross residual disease, in cases of advanced stage of epithelial ovarian cancer, undergoing interval cytoreduction. There was minimal perioperative morbidity, acceptable length of hospital stay and early institution of adjuvant chemotherapy. The survival rates in these women were comparable to those reported in the literature.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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