Factors Linked with Prognosis in Epithelial Ovarian Cancer: A Study From Lahore, Pakistan

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ABSTRACT

Background: Current study compared prognosis variables in epithelial ovarian cancer regarding survival and expired status with follow up date of 30-36 months. The variables analyzed for prognosis were age, BMI, marital status, FIGO stage, Type of tumor and parity. Identifying the factors affecting prognosis give insight of disease variation among ethnicities.

Objective: It was assumed that certain factors are linked with prognosis of ovarian cancer. Therefore, the factors like age (premenopausal and postmenopausal), BMI normal (25-29) and non-normal (>30), marital status (Married and unmarried), FIGO (I-IV) stage of tumor, tumor type (Malignant and borderline) and parity status (nulliparous, primiparous, multiparous) were analyzed.

Study Design: This is a Retrospective Study.

Place and Duration: Current study is a part of PhD research work and the period of this research was from July 2018 to July 2019. All the subjects of study were followed back after 30–36-month interval gap (2021-2022) from sample collection date to follow up date, and survival status was investigated.

Methodology: This study was conducted on 70 diagnosed epithelial ovarian cancer who were recruited for PhD research project. After the completion of study the participants were followed up after gap of (average) 30-36 months from sample collection time. Data was fetched telephonically from alive patients themselves while from first degree relatives of those who were found expired when traced.

Results: This study reported non-significant impact of Age (Premenopausal, postmenopausal), BMI, tumor Type, marital status and Parity on prognosis of ovarian cancer. However, this study reported significant association of FIGO stage of tumor with prognosis of survival with p=0.016.

Practical Implication: The second most frequent gynecological cancer is ovarian cancer, which has a 40% to 45% 5-year survival rate. Based on prognostic criteria, this ratio ranges from 15% to 95%. Prognosis is influenced by a wide range of clinical, pathological, and biological aspects. In this study, prognostic variables for advanced epithelial ovarian cancer were evaluated. Factors linked with prognosis of ovarian cancer are shown which will spread awareness in the community regarding Ovarian Cancer and bring some change in the community.

Conclusion: Therefore, it was concluded that BMI, Stage of tumor, Type and Parity impact impose on life of women being diagnosed with ovarian cancer.

Keywords: Ovarian cancer, prognosis, FIGO, parity, BMI, Chemotherapy, EOC, Premenopausal

INTRODUCTION

Ovarian epithelial cancer is still a fatal condition. Physicians who meet women with persistent lower abdomen symptoms must keep a high index of suspicion because there is no reliable screening tool. The survival rate of ovarian cancer among patients is very low, and epithelial ovarian cancer is more destructive gynecologic malignancy in women. When compared to other histological subtypes, such as the more prevalent serous carcinoma, clear cell carcinoma is associated with a worse prognosis if discovered at an advanced stage, because it has different molecular, clinical, and pathological characteristics from the other histological subtypes of epithelial ovarian cancer. For epithelial subtypes, the current recommended frontline therapy is still upfront surgery followed by chemotherapy using a combination of a platinum medication and paclitaxel. Individualized examinations and tailored management are especially necessary for aggressive or recurring ovarian cancer.

Worldwide the reported mortality in epithelial ovarian cancer is high. This is reported to be at eighth place of cause of death in women. There are multiple known factors e.g., nulliparity, early menarche, late menopause being known to be associated with the disease. The advanced treatment modalities has improved outcome in certain cases but recurrence and drug resistance affects the survival. The data is inconsistent about effect of BMI on prognosis of ovarian cancer. FIGO stage and histological subtype too, directly or indirectly affects the survival outcome. Moreover, this fact cannot be denied that if tumor is diagnosed at early stage it can improves life expectancy. Literature about effect of marital status and parity is associated with better prognosis of ovarian cancer. Recent studies show that multiparity decreases the risk of type 1 ovarian cancer in women.

In Pakistan, epithelial ovarian cancer is the most common gynecologic malignancy that causes fatalities. According to the Pakistan Cancer Society, 29,200 new cases would be identified and 21,500 women will pass away from the disease in 2020. In the last ten years, there have been 30% more cases of ovarian cancer and 18% more deaths from the disease. The prognosis for ovarian cancer is typically poor, however unlike many metastatic epithelial malignancies, some individuals with advanced disease may still be able to receive a cure.

Rationale of Study: The rationale of this retrospective study was to identify simple variables which affect prognosis in epithelial ovarian cancer. This study compared prognosis in terms of survival and expired status with follow up of 30-36 months from date of sample collection to date of follow up. The variables analyzed for prognosis were age, BMI, marital status, FIGO stage, Type of tumor and parity. Identifying the factors affecting prognosis give insight of disease variation among ethnicities. It was assumed in different studies of number of researchers that certain factors are linked with prognosis of ovarian cancer. This study compared prognosis in terms of survival and expired status with follow up of 30-36 months from date of sample collection to date of follow up.

METHODLOGY

This retrospective study was carried out on 70 diagnosed (histologically) ovarian cancer cases who were recruited as part of PhD research project. The study period of this research was from July 2018 to July 2019. All the subjects of study were followed back after 30–36-month interval gap (2021-2022) from sample collection date to follow up date, and survival status was...
RESULTS
The factors like age (premenopausal < 55 year and postmenopausal ≥ 55year), BMI (normal 25-29 and non-normal >30), Marital status (Married and unmarried), FIGO (I-IV) stage of tumor, tumor type (Malignant and borderline) and parity status (nulliparous, primiparous, multiparous) were analyzed for any association with prognosis. Many ovarian cancer patients are curious about the prognosis for their stage of the disease. A better prognosis is typically linked to early-stage disease rather than advanced stage disease. Ovarian cancer can occasionally run in families. Obvious signs of ovarian cancer, like bloating, are not always present. Oftentimes, ovarian cancer is discovered too late, although an early diagnosis may make the disease more manageable.

In table-1 the expired Premenopausal (15±0.1) at 37% and in Postmenopausal (15±0.2) at 50% while survived Premenopausal (25±0.2) at 63% and in Postmenopausal (15±0.2) at 50% with the non-significant (P<0.05) result were obtained. The findings were presented as standard mean deviation in table-1.

Table-1: Factors linked with Prognosis of ovarian cancer

<table>
<thead>
<tr>
<th>Age</th>
<th>Survival Status</th>
<th>Expired</th>
<th>Survived</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenopausal</td>
<td>≥55year</td>
<td>15±0.1</td>
<td>25±0.2</td>
<td>0.30</td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>≥55year</td>
<td>15±0.2</td>
<td>50±0.2</td>
<td>0.50</td>
</tr>
<tr>
<td>BMI</td>
<td>Normal (25-29)</td>
<td>13±0.2</td>
<td>18±0.2</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Non-Normal (&gt;30)</td>
<td>17±0.1</td>
<td>22±0.2</td>
<td>0.57</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td>Unmarried</td>
<td>10±0.1</td>
<td>8±0.1</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>20±0.1</td>
<td>32±0.1</td>
<td>0.62</td>
</tr>
<tr>
<td>FIGO Stage</td>
<td>Stage I &amp; II</td>
<td>10±0.1</td>
<td>25±0.1</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Stage III &amp; IV</td>
<td>20±0.1</td>
<td>15±0.1</td>
<td>0.43</td>
</tr>
<tr>
<td>TUMOR TYPE</td>
<td>Malignant</td>
<td>20±0.1</td>
<td>24±0.1</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>Borderline</td>
<td>10±0.2</td>
<td>16±0.2</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>Parity</td>
<td>10±0.1</td>
<td>15±0.1</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>Nulliparous</td>
<td>10±0.1</td>
<td>9±0.1</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>Primiparous</td>
<td>4±0.1</td>
<td>10±0.1</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Multiparous</td>
<td>16±0.1</td>
<td>21±0.1</td>
<td>0.57</td>
</tr>
</tbody>
</table>

DISCUSSION
In present study subjects were followed up after 30-36 (average) months and mean age of survival after diagnosis of ovarian cancer was found, 30-36 months while another study reported 22 months.

The factors like age (premenopausal < 55 year and postmenopausal ≥ 55year), BMI (normal 25-29 and non-normal >30), Marital status (Married and unmarried), FIGO (I-IV) stage of tumor, tumor type (Malignant and borderline) and parity status (nulliparous, primiparous, multiparous) were analyzed for any association with prognosis. Many ovarian cancer patients are curious about the prognosis for their stage of the disease. A better prognosis is typically linked to early-stage disease rather than advanced stage disease. Ovarian cancer can occasionally run in families. Obvious signs of ovarian cancer, like bloating, are not always present. Oftentimes, ovarian cancer is discovered too late, although an early diagnosis may make the disease more manageable.

In table-1 the expired Premenopausal (15±0.1) at 37% and in Postmenopausal (15±0.2) at 50% while survived Premenopausal (25±0.2) at 63% and in Postmenopausal (15±0.2) at 50% with the non-significant (P<0.05) result were obtained. The findings were presented as standard mean deviation in table-1.

Similarly, expired and survived levels of unmarried (10±0.1, 56%) (8±0.1,44%) and married (20±0.1, 38%) (32±0.1,62%) whereas FIGO stage I, II, III and IV were (10±0.1, 28%) (25±0.1,72%) (20±0.1, 57%) (15±0.1,43%), Tumor type, malignant (20±0.1,45%) (24±0.1,55%), Borderline (10±0.2, 38%) (16±0.1, 62%) and Nulliparous, Primiparous and Multiparous expired and survived levels (10±0.1, 53%) (9±0.1,47%) (4±0.1, 28%) (10±0.1, 72%) and (16±0.1, 43%) (21±0.1, 57%) were seen respectively.

The current study serves as a helpful resource for the significance of using taxane-based chemotherapy as the frontline therapy for all patients with ovarian cancer. It was discovered that stage, a prognostic factor known by prior research, significantly affected the survival of individuals with EOC to some extent. The majority of studies also show that the patient’s age at diagnosis is a significant prognostic factor. We also discovered that the stage of the disease and the patient’s age at diagnosis were predictive variables that affected the survival of EOC patients. In the current investigation, the survival of EOC patients was influenced by the stage, age, and parity status. In this study, the survival rate was higher for patients with early-stage disease and younger age. The results showed that younger age and early-stage disease were associated with better survival. On the other hand, multiparous patients had a higher risk of mortality compared to nulliparous patients. The current study is a major step forward in understanding the survival of EOC patients and could help in developing better treatment strategies.
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histology data 24. Nevertheless, the database did not contain specific details on adjuvant chemotherapy treatments, such as the dose given, or the outcomes of blood tests, such as CA125 levels. Despite the database’s quality improving, not all the data for each patient was accurate. Yet, the current analysis clarifies the predictive significance of several variables, including histological type, usage of chemotherapy based on taxanes, stage, and age at diagnosis.22 The results highlight the significance of histology-focused research and the selection of treatments, such as the inclusion of taxane-based chemotherapy, which would merit future study.1

CONCLUSION
This can be concluded that certain indicators of prognosis show inconsistent findings among various ethnicities and regions of the world. The objective of present study was to analyze and have pilot view of the factors associated with ovarian cancer prognosis for recruited sample size. This study is conclusive of positive and significant association of FIGO stage with prognosis of ovarian cancer among Pakistani women.

Conflict of Interest: No conflict of interest was faced during research.

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Authors Contribution: Every author contributed with their hearts encouraging effort in research.

REFERENCES