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Outcomes in BRCA Mutated Platinum-Sensitive Recurrent High-Grade Serous Ovarian Cancer Patients

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ABSTRACT
Background: *The eighth most frequent gynecologic cancer in the world is ovarian cancer. Due to its advanced state at diagnosis, it is the worst gynecological cancer. Despite being a disease found in wealthy nations, its prevalence has been rising daily in underdeveloped nations like Bangladesh. While the majority of ovarian cancer cases are rare, women with BRCA 1 and BRCA 2 mutations, which indicate the hereditary basis of ovarian cancer, have an increased chance of developing epithelial ovarian cancer.*
Objective: *The aim of this study is to assess the outcomes in women with BRCA mutation & platinum-sensitive recurrent high-grade serous ovarian cancer.*
Methods: *The prospective cohort study was conducted in the Department of Gynecological Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), & NICRH , Dhaka. A total 28 women with diagnosed with platinum-sensitive recurrent high-grade serous ovarian cancer were included in the study. Participants were divided into two groups according to their mutation status; patients with BRCA mutation were Exposed Group and those without BRCA mutation as Unexposed Group. The questionnaire was pretested, corrected and finalized. Data were collected by face-to-face interview and analyzed by appropriate computer based programmed software Statistical Package for the Social Sciences (SPSS), version 24.*
Results: *In this study, maximum study subjects 11(78.6%) were in ≤45 years age group in exposed group and 9(64.3%) were in >45 years age group in unexposed group. Mean age of the study subjects was 51.33±3.55 and 47.43±4.22 years in exposed and unexposed group respectively and majority of the patients 10 (71.4%) and 12 (85.7%) were literate and 4 (28.6%) and 2 (14.3%) were illiterate in exposed and unexposed group respectively. Comorbidities were present patients with PSR, the most common being hypertension 8 (57.1%) and 9 (64.3%) diabetes mellitus 7 (50.0%) and 7 (50.0%) and depression 4 (28.6%) and 3 (21.4%) in exposed and unexposed group respectively. About 6 (42.9%) respondent of exposed group and 5 (35.1%) of unexposed group had family history of breast / ovarian cancer. Majority respondents of Unexposed group 10 (71.4%) underwent Primary Debulking Surgery as primary treatment modality, whereas 7 (50.0%) exposed group did not receive Primary Debulking Surgery. Majority respondents of exposed group 9 (64.3%) received neo adjuvant chemotherapy and interval debulking surgery, whereas 3 (21.4%) respondents of unexposed group received Neoadjuvant chemotherapy and interval debulking surgery. The most common first-line platinum-based chemotherapy was the combination of carboplatin and paclitaxel, which was used in 10 (71.4%) and 9 (64.3%) of patients, the combination with bevacizumab was used in 2 (14.3%) and 3 (21.4%) of the patients. Majority of the patients 11 (78.6%) and 9 (64.3%) received 1st chemotherapy lines after 1st recurrence in exposed and unexposed group respectively. Mean time of recurrence for Exposed group and for Unexposed group was 12.34±2.63 and 11.33±3.34 months respectively. Mean progression free survival for Exposed group and for Unexposed group was 11.35±2.24 and 13.18±2.54 months respectively. Mean treatment free interval (TFI) for Exposed group and*

for Unexposed group was 12.17±2.16 and 11.24±2.07 months respectively. ***Conclusion:*** *According to these results, BRCA1/2 mutation carriers have better treatment outcomes, including longer survival, without a negative impact on the use of healthcare resources. To validate these findings, larger, multicentric investigations with a larger sample size are required.*

Key words: *Gynecologic malignancy, Ovarian cancer, High-grade serous carcinoma, BRCA 1 & 2 germline mutation, Clinical outcome, Survival outcome.*

I. INTRODUCTION:

Ovarian cancer is the eighth most common cause of cancer in females in the world, accounting for 3.4% of all new cases of cancer in 2018 [1]. The deadliest gynecologic disease, ovarian cancer was responsible for 313,959 new cases and 207,252 cancer-related deaths worldwide in 2020 [1]. Additionally, the rate of ovarian cancer has been steadily rising in our nation. Since 1990, Bangladesh's ovarian cancer death rate per 100,000 persons has risen by 40.3%, or 1.8% year, on average. According to Hyman et al. (2012), the incidence of ovarian cancer in Bangladesh was estimated to be 3132 in 2015 [2].

There are various histological subtypes of ovarian cancer, with over 90% of primary ovarian tumors being serous ovarian cancer (SOC) [3]. Historically, invasive SOC has been divided into four categories based on histologic appearance: serous, mucinous, endometrioid, and clear cell types. The most common kind of ovarian cancer, known as high-grade serous ovarian carcinoma (HGSOC), has a dismal prognosis [4].

Hereditary susceptibility is thought to be responsible for 5–14% of ovarian cancer cases, and mutations in the BRCA 1 and BRCA 2 genes provide a significant risk. Since their main roles are to maintain genomic stability and control cell growth, BRCA1 and BRCA2 are regarded as tumour suppressor genes implicated in homologous recombination (HR)-mediated DNA double strand break repair, which is also involved in cellular proliferation and chromosomal stability [5].

The genes BRCA1 and BRCA2 have been found to be causal in 65–75% of hereditary SOC cases. According to Lheureux et al. (2019), there is a significant correlation between high-grade SOC subtype vulnerability and harmful mutations in BRCA 1 and BRCA 2 [6]. Following their initial identification, mutations in the BRCA1 and BRCA2 genes have come to be understood as both a prognostic factor and a predictor of ovarian cancer susceptibility [7]. In women diagnosed with ovarian cancer, the frequency of germline mutations in BRCA 1 and BRCA 2 varies from 3% to 27% [8].

A family history of breast or ovarian cancer is the strongest known risk factor for ovarian cancer. According to a large prospective cohort research, carriers of BRCA 1 and BRCA 2 had a cumulative risk of 44% and 17%, respectively, of ovarian cancer until the age of 80. Among epithelial ovarian malignancies, high-grade serous ovarian cancer (HGSOC) is the most common and deadly type. In comparison to patients without a mutation, BRCA germline mutations were found to significantly improve overall survival in a sizable, pooled analysis of 26 observational studies. The mean 5-year overall survival for carriers of the BRCA 1 and BRCA 2 mutations was 44% and 52%, respectively, compared to 36% for non-carriers. Comparably, other studies have also shown that carriers of BRCA mutations have increased survival rates. Better prognosis due to chemo-sensitivity, response to PARP therapy and better survival rate [9].

There is proof that patients with ovarian cancer who have germline BRCA mutations have a better prognosis than those who do not. BRCA mutant patients survived longer than non-BRCA patients (77 versus 29 months), according to the first study that examined patient outcomes after receiving a BRCA mutation in 1996 (Rubin et al., 1996). Subsequent research has verified that these patients respond more favorably to platinum therapy than do those without BRCA mutations. It appears that those who carry the BRCA mutation are more susceptible to the advantages of intraperitoneal chemotherapy [10].

The precise impact of germ line BRCA1 and BRCA 2 mutations on the prognosis of ovarian cancer remains unclear to this day. Despite inconsistent results from other studies, a number of studies found that patients with germline BRCA mutations had a better prognosis, most likely as a result of their high response rate to platinum-based chemotherapy [11]. According to a Hyman study, patients with BRCA 2 mutations had a better prognosis than those with BRCA 1 mutations. The examination of the precise link between the survival outcomes and germline BRCA 1 and BRCA 2 mutations is hampered by the study population's variability and ethnicity [12]. In addition, BRCA 1 is a large gene whose protein product contains three representative domains that are regularly and frequently altered in cancer patients [13]. Regretfully, there is currently little information in our nation about the prognosis of serous ovarian cancer in relation to the presence or absence of BRCA mutations. Thus, the purpose of this research is to evaluate the impact of BRCA mutational status on prognosis in patients with serous epithelial ovarian cancer, with particular attention to the differences in clinical features between carriers and non-carriers of the mutation.

II. METHODOLOGY:

The prospective cohort study was conducted in the Department of Gynecological Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU & NICRH ,Dhaka. A total 28 women with diagnosed with platinum-sensitive recurrent high-grade serous ovarian cancer were included in the study. Participants were divided into two groups according to their mutation status; patients with BRCA mutation were Exposed Group and those without BRCA mutation as Unexposed Group. Patients who matched the inclusion and exclusion criteria were approached for participation in the study. Patients who were not willing to give consent were excluded. Purposive sampling was done according to the availability of the patients who fulfilled the selection criteria. Face to face interview was done to collect data with a semi-structured questionnaire. After collection, the data were checked and cleaned, followed by editing, compiling, coding, and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. Statistical evaluation of the results used to be obtained via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

III. RESULT:

Table I: Distribution of the patients according to age (n = 28)

Table I shows that, maximum study subjects 11(78.6%) were in ≤45 years age group in exposed group and 9(64.3%) were in >45 years age group in unexposed group. Mean age of the study subjects was 51.33±3.55 and 47.43±4.22 years in exposed and unexposed group respectively.

Age (years)	Exposed Group (n=14)	Unexposed Group (n=14)
≤45	3(21.4)	5(35.7)
>45	11(78.6)	9(64.3)
Mean ± SD	**51.33±3.55**	**47.43±4.22**

Table II: Distribution of the patients according to educational status (n = 28)

Table II shows that, majority of the patients 10 (71.4%) and 12 (85.7%) were literate and 4 (28.6%) and 2 (14.3%) were illiterate in exposed and unexposed group respectively

Education	Exposed Group (n=14)	Unexposed Group (n=14)
Illiterate	4 (28.6)	2 (14.3)
Literate	10 (71.4)	12 (85.7)

Table III: Distribution of the patients according to comorbidities (n = 28)

Table III shows that, comorbidities were present patients with PSR, the most common being hypertension 8 (57.1%) and 9 (64.3%) diabetes mellitus 7 (50.0%) and 7 (50.0%) and depression 4 (28.6%) and 3 (21.4%) in exposed and unexposed group respectively

Comorbidities	Exposed Group (n=14)	Unexposed Group (n=14)
Hypertention	8 (57.1)	9 (64.3)
Diabetes Mellitus	7 (50.0)	7 (50.0)
Depression	4 (28.6)	3 (21.4)

Table IV: Distribution of the patients according to family history of breast / ovarian cancer (n = 28)

Table IV shows that, 6 (42.9%) respondent of exposed group and 5 (35.1%) of unexposed group had family history of breast / ovarian cancer.

Family history of breast / ovarian cancer	Exposed Group (n=14)	Unexposed Group (n=14)
Yes	6 (42.9)	5 (35.1)
No	8 (57.1)	9 (64.3)

Table V: Distribution of the patients according to Primary Debulking Surgery (n = 28)
Table V shows that, majority respondents of Unexposed group 10 (71.4%) underwent Primary Debulking Surgery as primary treatment modality, whereas 7 (50.0%) exposed group did not receive Primary Debulking Surgery

Primary Debulking Surgery	Exposed Group (n=14)	Unexposed Group (n=14)
Yes	7 (50.0)	10 (71.4)
No	7 (50.0)	4 (28.6)

Table VI: Distribution of the patients according to Neoadjuvant Chemotherapy and Interval Debulking Surgery (n = 28)
Table VI shows that, majority respondents of exposed group 9 (64.3%) received neo adjuvant chemotherapy and interval debulking surgery, whereas 3 (21.4%) respondents of unexposed group received Neoadjuvant chemotherapy and interval debulking surgery

Neoadjuvant Chemotherapy and Interval Debulking Surgery	Exposed Group (n=14)	Unexposed Group (n=14)
Yes	9 (64.3)	3 (21.4)
No	5 (35.7)	11(78.6)

Table VII: Distribution of the patients according to 1st line platinum-based treatment (n = 28)
Table VII shows that, the most common first-line platinum-based chemotherapy was the combination of carboplatin and paclitaxel, which was used in 10 (71.4%) and 9 (64.3%) of patients, the combination with bevacizumab was used in 2 (14.3%) and 3 (21.4%) of the patients

1st line platinum-based treatment	Exposed Group (n=14)	Unexposed Group (n=14)
Carboplatin	1 (7.1)	1 (7.1)
Cisplatin	1 (7.1)	1 (7.1)
Carboplatin + paclitaxel	10 (71.4)	9 (64.3)
Cisplatino + paclitaxel	0	0
Carboplatin + paclitaxel + bevacizumab	2 (14.3)	3 (21.4)
Cisplatino + paclitaxel + bevacizumab	0	0

Table VIII: Distribution of the patients according to number of chemotherapy lines after 1st recurrence (n = 28)
Table VIII shows that, majority of the patients 11 (78.6%) and 9 (64.3%) received 1st chemotherapy lines after 1st recurrence in exposed and unexposed group respectively

Number of chemotherapy lines after 1st recurrence	Exposed Group (n=14)	Unexposed Group (n=14)
1	11 (78.6)	9 (64.3)
2	3 (21.4)	2 (14.3)
3	1 (7.1)	2 (14.3)
≥4	0	1 (7.1)

Table IX: Distribution of the patients according to Time of recurrence, Progression free survival and Treatment free interval (n = 28)

Table IX shows that, Mean time of recurrence for Exposed group and for Unexposed group was 12.34±2.63 and 11.33±3.34 months respectively. Mean progression free survival for Exposed group and for Unexposed group was 11.35±2.24 and 13.18±2.54 months respectively. Mean treatment free interval (TFI) for Exposed group and for Unexposed group was 12.17±2.16 and 11.24±2.07 months respectively.

Variables	Exposed Group (n=14)	Unexposed Group (n=14)
Time of recurrence (months)	12.34±2.63	11.33±3.34
Progression free survival (months)	11.35±2.24	13.18±2.54
Treatment free interval (months)	12.17±2.16	11.24±2.07

IV. DISCUSSION:

The initial treatment of advanced ovarian cancer (stage II-IV) is well established. When complete tumor resection is considered feasible, the standard of care is primary debulking surgery followed by adjuvant therapy with carboplatin/paclitaxel; in fact, complete tumor resection is the main prognostic factor for these patients [14]. Neoadjuvant chemotherapy prior to debulking surgery and adjuvant chemotherapy could be another option for selected patients (e.g., when upfront surgery is contraindicated for medical reasons or when complete cytoreduction cannot be achieved), although currently there is no consensus about who are the best candidates to receive neoadjuvant chemotherapy [15]. Guidelines also established that bevacizumab could be considered in combination with carboplatin/paclitaxel followed by maintenance of bevacizumab in monotherapy.

The cross-sectional observational study was conducted in the Department of Gynecological Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. A total 28 women with diagnosed with platinum-sensitive recurrent high-grade serous ovarian cancer were included in the study.

In this study, maximum study subjects 11(78.6%) were in ≤45 years age group in exposed group and 9(64.3%) were in >45 years age group in unexposed group. Mean age of the study subjects was 51.33±3.55 and 47.43±4.22 years in exposed and unexposed group respectively. In another study, patients had a mean age of 58 years, were Caucasian, and over 80% presented FIGO stage III-IV and had a primary tumor location in the ovary. Another study shows the risk of ovarian cancer increases in women who have ovulated more over their lifetime. This includes those who have never had children, those who begin ovulation at a younger age or reach menopause at an older age [16]. Ovarian cancer is most commonly diagnosed after menopause [17]. In this present study it was observed that age belonged to ≤45 years was significantly more common in BRCA1 & 2 mutation group between two groups, however educational status was almost alike between two groups, no statistical significant difference was observed between two groups. Neff et al. (2017) study found convincing evidence of an age discrepancy for onset of disease between BRCA1/2, with BRCA1 patients having an increased risk after age 40 and BRCA2 patients after age 50 years, which is comparable with the current study [10]. National Comprehensive Cancer Network (NCCN) and Society of Gynecologic Oncology (SGO) recommend consideration of salpingo-oophorectomy (RRSO) following completion of childbearing and after 35 years in women with known BRCA mutation. This is based on the relative increase in risk of a gynecologic malignancy in a BRCA1 carrier after 40 years. Kim et al. 2019 study observed that 60.8% patients belonged to age ≥50 years in BRCA mutation and 75.3% in BRCA non mutated group, which is higher age ranged with the current study [18]. Similarly, Shi et al. (2018) study also higher age ranged ages at diagnosis between pathogenic mutation carriers and non-carriers. Shi et al. (2018) study showed there were no significant differences in mean ages at diagnosis between pathogenic mutation and non-mutation group. The higher age ranged obtained by the above authors maybe due to geographical variations, racial, ethnic differences and genetic causes may have significant influence on their study subjects.

In the present study, majority of the patients 10 (71.4%) and 12 (85.7%) were literate and 4 (28.6%) and 2 (14.3%) were illiterate in exposed and unexposed group respectively. Alberg et al. (2016) study findings suggested that ovarian cancer risk may be inversely associated with socioeconomic status, higher levels of education were inversely associated with ovarian cancer risk and individuals with the highest income level had a non-significantly lower risk than did those with the lowest income level.

In this present study, Comorbidities were present patients with PSR, the most common being hypertension 8 (57.1%) and 9 (64.3%) diabetes mellitus 7 (50.0%) and 7 (50.0%) and depression 4 (28.6%) and 3 (21.4%) in exposed and unexposed group respectively. In another study, over 90% of the patients with PSR had an ECOG performance status of 0-1 (Table 2). Comorbidities were present in 124 (51.9) of the patients with PSR, the most common being hypertension (n = 65, 27.2%), diabetes without end-organ damage (n = 32, 13.4%) and depression (n = 25, 10.5%). About 6 (42.9%) respondent of exposed group and 5 (35.1%) of unexposed group had family history of breast / ovarian cancer. In another study it was observed that 36.36% respondent of Exposed group and

25% of Unexposed group showed positive family history of breast and ovarian cancer. Positive family history of breast/ovarian cancer was significantly associated with BRCA1 & BRCA 2 mutation group. Shi et al. (2018) study reported that patients who had family or personal history of Hereditary Breast and Ovarian Cancer (HBOC) related tumors had a significantly increased rate of pathogenic gBRCA1/2 mutations, which support with the present study. In last decade, recommendations for BRCA testing and genetic counseling have further expanded to any individual who is diagnosed with an invasive ovarian cancer, even in the absence of a family history (Society of Gynecologic Oncology, 2015 and National Comprehensive Cancer Network, 2017) [19, 20]. On the others hand, according to Bolton et al. 2012 cases from BRCA 1/BRCA 2 non-mutated families could carry germline mutations in genes in the same pathway as BRCA1/BRCA2 or in different pathways that produce similar clinical features [21]. Another study shows only 17 (7.1%) had a personal history of gBRCA mutation, and 41 (17.2%) had a family history of gBRCA mutation, mostly in a first-degree relative. Ovary cancer was present in 48.8% of the relatives with a gBRCA mutation, and breast cancer was present in 82.9% of the relatives. There were no relevant differences between gBRCA1/2-mutated patients and gBRCA wild-type patients regarding demographic and clinical characteristics.

In this study Majority respondents of Unexposed group 10 (71.4%) underwent Primary Debulking Surgery as primary treatment modality, whereas 7 (50.0%) exposed group did not receive Primary Debulking Surgery. Majority respondents of exposed group 9 (64.3%) received neo adjuvant chemotherapy and interval debulking surgery, whereas 3 (21.4%) respondents of unexposed group received Neoadjuvant chemotherapy and interval debulking surgery. Shi et al. (2018) study obtained that the effect of gBRCA1/2 mutations might be superior on the initial response to chemotherapy, particularly in those with incomplete cytoreduction, leading to a better survival. Majority respondents of Unexposed group (75%) received Primary Debulking Surgery whether majority respondents of exposed group (54.55%) received Neo adjuvant chemotherapy and interval debulking surgery. Significant difference was not found between groups regarding type of treatment. Kim et al. (2019) study observed that nearly two third (62.7%) patients received primary debulking surgery (PDS) in BRCA mutation and 61.0% in BRCA non-mutation type, which also not significant between two groups in terms type of treatment. In contrary to Shi et al. (2018) study findings, Hyman stated that there was no correlation between the BRCA mutation status and the rate of optimal debulking surgery [2], which might be affected by various ethnics and different sample size. Narod, (2016) study mentioned that survival is maximized when residual disease is minimized after complete cytoreduction and chemotherapy [22]. Moreover, Ren et al. 2015 found that neoadjuvant chemotherapy was independently associated with OS, which was consistent with previous retrospective study [23]. Petrillo et al. (2017) reported that in the subgroup of BRCA1/BRCA2 non-mutation carriers, patients with neoadjuvant chemotherapy had a worse PFS than those with primary debulking surgery, but no significant difference was found in BRCA1/BRCA2 mutation carriers, nor in the estimation of OS [24].

In present study, the most common first-line platinum-based chemotherapy was the combination of carboplatin and paclitaxel, which was used in 10 (71.4%) and 9 (64.3%) of patients, the combination with bevacizumab was used in 2 (14.3%) and 3 (21.4%) of the patients. Majority of the patients 11 (78.6%) and 9 (64.3%) received 1st chemotherapy lines after 1st recurrence in exposed and unexposed group respectively. In another study, Overall, the median PFS to first-line platinum-based treatment was 19.4 months, with no differences between BRCA1/2-mutated and BRCA wild-type patients. The time to progression was longer among those who did not receive bevacizumab; however, OS did not differ between bevacizumab-containing regimens and those without bevacizumab. OS after the first-line platinum-based treatment was 48.6 months, and there were statistically significant differences across several strata of BRCA testing; BRCA1 mutated (81.7 months) and BRCA2 mutated (69.3 months) patients exhibited a longer OS than BRCA wild-type patients (70.0 months). Moreover, OS was also longer among BRCA1 and BRCA2 mutated patients than in BRCA wild-type patients after first recurrence (45.4, 49.2 and 26.1 months, respectively).

In the present study, mean time of recurrence for Exposed group and for Unexposed group was 12.34±2.63 and 11.33±3.34 months respectively. Mean progression free survival for Exposed group and for Unexposed group was 11.35±2.24 and 13.18±2.54 months respectively. Mean treatment free interval (TFI) for Exposed group and for Unexposed group was 12.17±2.16 and 11.24±2.07 months respectively. In another study, Mean time of recurrence for Exposed group and for Unexposed group was 10.34±2.73 and 8.33±3.44 months respectively. Independent sample t test showed the difference was not statistically significant. In this current study it was observed that Mean progression free survival for Exposed group and for Unexposed group was 12.35±2.23 and 10.18±2.56 months respectively.

The median time from diagnosis to the first recurrence was 20.4 months, and the median time from first-line platinum-based therapy to the first recurrence was 13.6 months (Table 2). The time from BRCA testing to first recurrence and to first-line platinum-based therapy are presented in Table 2. There were no relevant differences in these characteristics between the BRCA1/2 mutated and BRCA wild-type groups. Primary cytoreductive surgery was performed in three-quarters of the patients and was slightly more common among

BRCA-tested patients (Table 2). Among BRCA-tested patients, primary cytoreductive surgery with no residual disease was less common among the BRCA1/2-mutated group than in the BRCA wild-type group (36.4 vs 46.3%), while primary cytoreductive surgery with residual disease>1 cm was more common among the BRCA1/2-mutated group than in the BRCA wild-type group (31.8 vs 9.8%); bilateral salpingo-oophorectomy, hysterectomy and secondary cytoreductive surgery were most common among BRCA1/2-mutated patients. The most common first-line platinum-based chemotherapy was the combination of carboplatin and paclitaxel, which was used in 84.1% of patients, with no relevant differences between BRCA1/2 mutated and BRCA wild-type patients [25]. The combination with bevacizumab was used in 18 (7.5%) of the patients, and none of these patients had a BRCA1/2 mutation. The number of chemotherapy lines received after the first recurrence was 1 (77.8%),

2 (29.7%), 3 (7.9%) and 4 or more lines (2.9%) (Table 2). The mean number of lines after the first recurrence was lower among BRCA1- (1.4 ± 0.6) and BRCA2-mutated patients (1.2 ± 0.4) than in BRCA wild-type patients (1.7 ± 1.1).

Approximately 90% of the patients had a follow-up visit with a mean (SD) of 17.0 (12.2) visits per patient, mainly as visits to the physician's office (87.0%) and less commonly as hospital visits (40.2%). Approximately half of the patients required hospitalization and visited the emergency department during the follow-up. The frequency of health resource utilization was greater among patients with BRCA1/2 mutations than in patients with wild-type BRCA (Figure 2). When evaluated as the incidence rate (patient-month) of health resource utilization, the rates for the BRCA1/2 mutated group and the BRCA wild-type group were as follows: hospitalizations (0.09 vs 0.05), emergency visits (0.14 vs 0.07), office physician visits (0.91 vs 0.96), hospital physician visits (0.36 vs 0.16), and overall physician visits (1.27 vs 1.12) [26].

V. CONCLUSION:

In conclusion, as BRCA1/2 mutation carriers have better treatment results, our data underscores the significance of determining BRCA status in patients with HGSOC. Significantly, the subanalysis comparing BRCA1/2 mutated and BRCA wild-type patients revealed that the BRCA mutated patients had longer longevity without adversely affecting the utilization of healthcare resources. Furthermore, along with other research, the information gathered for our study suggests that developing fresh approaches early in the illness is critical to enhancing the overall survival and quality of life of HGSOC patients. Finally, the subanalysis results suggest that starting maintenance treatment with PARP inhibitors in the first-line context for patients with BRCA1/2 mutation-related HGSOC may have a similar financial impact, but more research is needed to confirm this.

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