

Correlation of BRCA genetic mutations with family history of malignancy and survival rate in epithelial ovarian carcinoma

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ABSTRACT

Introduction: Epithelial ovarian carcinoma is one of the gynaecological malignancies with high mortality. BRCA genetic mutations have been identified as important risk factors, but their association with family history and survival rate still requires further investigation. **Objective:** The study evaluates the relationship of BRCA genetic mutations with family history of malignancy and survival rate in epithelial ovarian carcinoma. **Materials and Methods:** This observational analytical study with a retrospective cohort design involved 62 patients with epithelial ovarian carcinoma. Data were collected through medical records, interviews, and paraffin block sample analysis. Statistical analysis included the Chi-square test and Kaplan-Meier survival analysis. **Results:** The prevalence of BRCA mutations in patients with epithelial ovarian carcinoma was 50%, with 90.3% having BRCA1 mutations and 9.7% having BRCA2 mutations. There was a significant association between BRCA mutations and family history of malignancy ($p=0.020$), with 58.1% of BRCA-positive patients having a positive family history compared to 12.9% of BRCA-negative patients having a positive family history. BRCA status was significantly correlated with the final status of the patient ($p = 0.038$), where the BRCA-positive group showed a higher survival rate (67.7%) than the BRCA-negative group (64.5%). Kaplan-Meier survival analysis for Overall Survival (OS) showed that patients with positive BRCA mutations had a median survival time of 20.87 months (SE 1.10), slightly higher than the BRCA-negative group with a median of 19.03 months (SE 1.32). Although there was a difference of about 1.84 months, this result did not show statistical significance ($p=0.64$). As for Progression Free Survival (PFS), patients with BRCA-positive had a median time of 22.72 months (SE 0.73) compared to 21.67 months (SE 1.14) in the BRCA-negative group. This difference of 1.05 months also did not show statistical significance ($p=0.48$). **Conclusion:** BRCA genetic mutations have a high prevalence in patients with epithelial ovarian carcinoma and are significantly associated with a history of malignancy in the family, chemotherapy administration, and the final status of the patient. Survival analysis using the Kaplan-Meier method for Overall Survival (OS) and Progression Free Survival (PFS) for 2 years did not show significant results.