BYCA1/2 MUTATIONS PREDICT BETTER SURVIVAL IN HIGH-GRADE ENDOMETRIOID ENDOMETRIAL CANCER

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Introduction/Background Recent studies and clinical trials demonstrated the vital significance of BRCA mutational status in ovarian cancer treatment, but related evidence in endometrial cancer (EC) is still limited. This study aims to investigate the role of BRCA mutations in predicting EC patients’ survival.

Methodology 510 eligible cases from the Cancer Genome Atlas database were retrospectively analysed. Clinicopathological characteristics of patients with different BRCA1/2 mutational status were compared. To analyse the survival influence of BRCA1/2 mutation, Kaplan-Meier survival analyses and Cox regressions were conducted. In order to control confounding bias between groups, propensity score matching method was used.

Results Among the eligible patients, 11 (2.2%) harboured BRCA1 mutations, 43 (8.4%) harboured BRCA2 mutations, and 36 (7.1%) harboured both. Body mass index, rates of hypertension history, proportion of non-endometrioid histology and rates of positive peritoneal cytology were lower in BRCA1/2 mutant patients compared with the wild-type counterpart (p = 0.020, 0.048, 0.001 and 0.012, respectively). Patients with BRCA1/2 mutations showed longer overall (OS) and recurrence-free survival (RFS) (in Kaplan-Meier analyses, p < 0.001 and p = 0.0077, respectively; in Cox regressions, p = 0.001 and 0.0077, respectively). Further analyses indicated that the survival influence of BRCA1/2 mutations was only significant in high-grade endometrioid EC patients. Based on the cohorts generated after propensity score matching, in high-grade endometrioid EC patients, the influence of BRCA1/2 mutations remained significant on OS, but not on RFS (p = 0.003 and 0.057 in Kaplan-Meier analyses, p = 0.020 and 0.071 in Cox regressions).

Conclusion BRCA1/2 mutations could predict better survival outcome in high-grade endometrioid EC patients, indicating the value of BRCA testing in EC clinical management.

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