

## **BRCA1-related multiple primary cancers in Belarus**

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The study of primary-multiple tumors allows us to come closer to understanding both the differences existing between individual tumors, and their similarity, based on the unity of a significant number of risk factors. The aim of the study was to study the clinical and diagnostic features of primary-multiple tumors with ovarian involvement. In 81 patients included in the study, 174 malignant tumors were diagnosed, one of which was localized in the ovaries. Primary multiplicity of neoplasms in most cases was represented by two localizations - 70 cases (86%), less often three - 10 patients (12%). Often the development of ovarian cancer was combined with breast cancer - 27 cases (33%), uterine malignant tumors - 23 (28%) and gastrointestinal tract tumors - 16 (20%). The study of family history indicates the presence of a hereditary predisposition to the development of tumors in 36 women (44%). Only in 16% of cases relatives of the first line had ovarian and / or breast cancer. Twenty BRCA1 germ-line mutation carriers (25%) were identified by the analysis of the Slavic founder alleles in BRCA1 gene. Among these were the most frequently detected mutations 5382insC (55%) and 4153delA (25%). Among women with breast and ovarian cancer, the mutation in the BRCA1 gene was confirmed in 56% of cases, which confirms the importance of genetic factors in the development of primary-multiple tumors of the female reproductive system. In this work, the characteristics of synchronous and metachronous primary-multiple tumors are presented. When studying the receptor status of BRCA1-associated primary-multiple tumors of the ovaries and mammary gland, it was found that most ovarian carcinomas, unlike breast tumors, have a receptor-positive status. A burdened family history and the identification of mutations in the BRCA1 gene should be considered as an integral part of a comprehensive survey of women with malignant neoplasm of the female reproductive system to determine the genetic risk of developing new tumors of the female reproductive system and develop the principles of genetic cancer prevention. Features of the receptor status of BRCA1-related ovarian carcinomas allow each patient to be treated differently, taking into account the genetic and receptor status of a specific tumor.