

2805MO**The impact of a Mediterranean dietary intervention in the occurrence of BRCA-related events**

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Background

BRCA1/2 genes pathogenic variants (mutations) have an estimated incidence of about 1 case per 400 people. Due to their high lifetime risk of developing breast and/or ovarian cancer, women with BRCA mutations attend life-long health services and intensive programmes of surveillance and prophylactic surgery. Epidemiological studies have suggested that environmental factors, such as lifestyle and metabolic/hormonal/anthropometric/inflammatory factors may affect the penetrance of *BRCA1/2*. Our Italian multicenter randomized controlled trial on women carriers of *BRCA1/2* mutations has demonstrated that an intervention of Mediterranean diet with moderate protein restriction (≈11% of total calorie intake) is effective in reducing IGF-I and other metabolic modulators of BRCA penetrance. Here, we report the incidence of BRCA-related events in the trial participants according to the randomization arm.

Methods

502 women with BRCA mutations, aged 18-70 years, with or without a previous cancer diagnosis, were randomized to a MedDiet intervention group (IG) or a control group (CG). The IG women were invited to attend dietary activities, which consisted of thematic nutritional and kitchen courses, and community meals over a six-month period.

Results

The cumulative incidence of BRCA-related events over 7 years of follow-up (on average) was of 28 events in the IG and 39 events in the CG, with an HR of 0.60 (95% CI: 0.36-0.99, $p=0.04$) after controlling for age, center, education, menopausal status, BMI and adherence to Mediterranean diet at baseline.

Conclusions

The lower incidence of BRCA-related events in the women of IG suggest the potential role of diet in modulating BRCA penetrance.

Clinical trial identification

NCT03066856.

Legal entity responsible for the study

Fondazione IRCCS Istituto Nazionale dei Tumori di Milano.

Funding

Fondazione AIRC.

Disclosure

All authors have declared no conflicts of interest.

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