LETTER TO THE EDITOR

Breast Cancer Prevention in BRCA1/2 Mutation Carriers: A Qualitative Review

To the Editor:

We recently qualitatively reviewed the literature on primary prevention strategies in BRCA 1/2 mutation carriers for chemoprevention and risk reduction surgery. The trials had to provide information on the effectiveness of primary prevention (bilateral mastectomy, bilateral salpingo-oophorectomy or tamoxifen) in terms of breast cancer risk reduction in BRCA 1 or 2 mutation carriers. This review focused on breast cancer incidence, total mortality and specific breast cancer mortality. The data from each study was descriptively summarized; a quantitative meta-analysis was not feasible in the absence of randomized controlled trials and with such heterogeneous study designs and insufficient data.

Ten studies were retained. Six multi-center cohort studies evaluate the efficacy of bilateral prophylactic salpingo-oophorectomy (1–6). They report a reduction of approximately 50% in the incidence of breast cancer and one trial reveals a mortality reduction after bilateral salpingo-oophorectomy.

Three cohort studies evaluate the incidence of breast cancer after bilateral prophylactic mastectomy (7–9). All of these studies report a significant reduction of more than 95% of the incidence of breast cancer in the BPM group. However these trials are of insufficient methodological quality and the data on the effectiveness of BPM on mortality is not available at present.

One study evaluates the effectiveness of tamoxifen in healthy BRCA mutation carriers (10). This analysis shows a nonsignificant reduction of the incidence of breast cancer in BRCA 2 mutation carriers (RR: 0.38, 95% CI: 0.06–1.56). However, this study did not highlight a reduction of the incidence of breast cancer in BRCA 1 mutation carriers (RR: 1.67, 95% CI: 0.32–10.70). It is difficult to draw conclusions concerning the effectiveness of tamoxifen in BRCA mutation carriers given that the only study available is a (post hoc) analysis including too few cases.

Primary prevention is a promising approach in the fight against breast cancer, especially for women at very high risk carrying BRCA mutations. More studies are necessary, especially to evaluate the effect of prevention on mortality.

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REFERENCES


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