Breast Cancer RESEARCH

LETTER

Frequency of the CHEK2 1100delC mutation among women with early-onset and bilateral breast cancer

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We read with great interest the recent *Breast Cancer Research* paper by Desrichard and colleagues [1] reporting the association between CHEK2 mutations and non-BRCA hereditary breast cancer risk. This report summarized the results of different case-control studies to provide an overview of CHEK2 1100delC mutation and susceptibility to early-onset breast cancer (EOBC) and bilateral breast cancer (BBC). We believe there are significant issues to note regarding the authors' study.

To investigate the role of CHEK2 1100delC mutation in BBC susceptibility, Desrichard and colleagues performed a systematic review and pooled analysis based on five studies. Notably, another study that showed contradictory results indicating that the 1100delC mutation might not be a modifier in BBC [2] was not included in these analyses. Rashid and colleagues [3] have also shared their data, which failed to identify CHEK2 1100delC mutations among cases of BBC. Interestingly, the study by de Jong and colleagues [4] categorized individuals with BBC as unselected breast cancer cases. However, the BBC cases were included in the group of 192 patients identified with early-onset/familial breast cancer from an Irish study [5]. Hence, ongoing uncertainty exists and, in our opinion, the conclusion reached by Desrichard and colleagues may not be fully supported by the available data.

An additional issue is the association between CHEK2 mutations and EOBC risk. Using the same search strategy as that of Desrichard and colleagues, we located three relevant case-control studies in PubMed comprising a total of 3,742 EOBC cases and 8,405 controls [6-8], which were not included in the pooled analyses. Furthermore, we have combined all of the studies on European populations into a new pooled analysis. By using a fixed-effect model, significant associations were found to be associated with CHEK2 1100delC mutation in patients with EOBC (odds ratio 3.14, 95% confidence interval 1.86 to 5.28).

In conclusion, the association between CHEK2 1100delC mutation and BBC risk may be complex, and further studies will likely be needed to clarify the correlation of BBC and familial breast cancer characteristics. Similarly, further studies on EOBC-specific populations would be helpful for the purpose of better evaluating the association between CHEK2 1100delC mutation and EOBC risk.

Abbreviations

BBC, bilateral breast cancer; EOBC, early-onset breast cancer.

Competing interests

The authors declare that they have no competing interests.

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