Variation of exon 11 of the BRCA1 gene in patients with familial breast cancer at the Mohammed VI center for the treatment of cancers

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Background
Breast cancer is predominantly sporadic, but familial aggregation has been found in 20% of cases. However, only 5 to 10% of breast cancers could be explained by hereditary predisposition. In addition, women with this mutation have a 56-80% chance of developing cancer before age 70 years. The objective of this is to study determine the mutations of the BRCA1 gene in patients with familial breast cancer and to describe the clinical and pathological features associated with these variations.

Patients and methods
We present in this study an analysis of exon 11 of BRCA1 gene in 27 Moroccan women with breast cancer family by Sanger sequencing and the SPSS software carried out the statistical analysis.

Results
The mean age of the patients was 41.3 ± 9.1 years. 14.8% of the cases were menopausal at the time of diagnosis. The use of oral contraceptives was found in 22.2% of cases. The stage at diagnosis was early (stage II and I) in the majority of cases (59.3%). The c.2612C>T (p.Pro871Leu) was found in 70.4% of the cases. The c.2596C>T (p.Arg866Cys) was present in only one case. The c.2884C>T (p.Glu962Lys) was found in only one case.

A significant difference in the age of onset of cancer was observed. Patients with BRCA1 variation were younger compared to those with no change (40.3 ± 9.5 versus 43.6 ± 8.2 years p = 0.04).

Conclusion
It should be noted that in our series studied, 7.4% of the cases present a genetic variation and seems to be involved in the carcinogenesis of the breast cancer. The results presented in this study are the first to determine the proportion of familial breast cancer in our center and that have the existence of molecular signatures associated with the presence of a mutation of exon 11 of the BRCA1 gene.

Keywords: Family Breast cancer, BRCA1, epidemioclinic, pathological