Research Article

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Molecular Classification of Breast Cancer in the Region of Constantine: An Epidemiological Study

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Abstract

Breast cancer (CS) is the most common female cancer worldwide, ranking first in Algeria for its frequency and mortality. Molecular classification has distinguished at least four molecular types: luminal A, luminal B, HER2 and basal-like.

Our objective is to study the phenotypic profile of breast cancer in women with cancer as well as the different clinical, immunohistochemical and therapeutic aspects of different molecular groups. We undertook a retrospective study between October 2016 and December 2017. This study involved 121 files.

The distribution of the population according to age showed that the most affected age group is [53-63] years old with 35%. Molecular classification results showed that the most common type was luminal A at 37.19%, followed by luminal type B at 27.27%, basal-like at 19.83%, and HER2 at 15.70%.

Breast cancer of luminal type, expressing [ER], accounts for 70 to 80% of all mammary carcinomas and that the luminal group A is the most common with proportions of 58, 5% and 54.3% respectively while the distinction is observed in the other groups.

Molecular classification plays a very important role in the treatment. This result shows that luminal type A is the most common, and that postmenopausal women are most likely to have breast cancer. This classification is very important in the orientation of the treatment. The resulting molecular classification is expected to better classify tumors to a personalized therapy. Breast cancer, molecular classification, immunohistochemistry, hormone receptors, HER2 status.

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Introduction

CS refers to the erratic growth and proliferation of cells that come from breast tissue. There are several types of

tumors that can develop in different areas of the breast. Most tumors are the result of mild (non-cancerous) changes in the breast. For example, fibrocystic change

is a non-cancerous disease in which women develop cysts (accumulated fluid packets), fibrosis (formation of scar connective tissue), bumps and areas of thickening, tenderness, or breast pain Most SCs start in the cells that line the ducts (ductal cancers). Some start in the cells lining the lobules (lobular cancers), while a small number start in other tissues [1].

Breast cancer (CS) is the most common female cancer worldwide, ranking first in Algeria for its frequency and mortality [2,3]. Molecular classification has distinguished at least four molecular types: luminal A, luminal B, HER2 and basal-like [4].

Our objective is to study the phenotypic profile of breast cancer in women with cancer as well as the different clinical, immunohistochemical and therapeutic aspects of different molecular groups.

Materials and Methods

We undertook a retrospective study between October 2016 and December 2017. This study involved 121 files.

Results and Discussion

The age of the population in our series varies between 20 and 85 years with an average age of 51 years. 45.45% of women are menopausal. The age groups are subdivided by amplitude of 10 years (Figure 1).

Figure 1: Distribution of the study population by age.

The results show that the age group most affected is that between [53 - 63]. The age group [75 - 85] represents 2.50% (3 cases only). Before the age of 30, the occurrence of SC remains low (3.33%). Our results are in agreement with those of [5].

The distribution of the population according to age showed that the most affected age group is [53-63] years

old with 35%. Molecular classification results showed that the most common type was luminal A at 37.19%, followed by luminal type B at 27.27%, basal-like at 19.83%, and HER2 at 15.70%.

Breast cancer of luminal type, expressing [ER], accounts for 70 to 80% of all mammary carcinomas and the work of and demonstrate that the luminal group A is the most common with proportions of 58 , 5% and 54.3% respectively while the distinction is observed in the other groups (Figure 2) [6,7].

Figure 2: Distribution of study population by molecular type.

Conclusion and Perspective

Molecular classification plays a very important role in the treatment. This result shows that luminal type A is the most common, and that postmenopausal women are most likely to have breast cancer. This classification is very important in the orientation of the treatment. The resulting molecular classification is expected to better classify tumors to a personalized therapy.

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