VOLUME-8, ISSUE-2, FEBRUARY-2019 • PRINT ISSN No 2277 - 8160

Original Research Paper

Oncology

HER-2 POSITIVE BREAST CANCER, GENERAL DESCRIPTION: "HOSPITAL ONCOLOGICO GRAL. SOLON ESPINOSA AYALA" SOLCA QUITO-ECUADOR

Leonardo David Villacrés*	MD. Oncology Fellow"Universidad Central del Ecuador" *Corresponding Author
María José Muñoz	MD. Oncology Fellow"Universidad Central del Ecuador"
Verónica Perlaza	MD. Oncology Fellow"Universidad Central del Ecuador"
Elizabeth Romero	Medical Resident at "Hospital Oncológico Gral. Solon Espinosa Ayala" Quito-Ecuador
Marco León Montenegro	Medical resident at"Hospital de especialidades de las Fuerzas Armadas N°1"
Carolina Saldaña	Medical resident at"Hospital de especialidades de las Fuerzas Armadas N°1"
Alexander Jara	General Practitioner
René Muñoz	MD. Clinical Oncology Attending Physician, Chief of Clinical Oncology service at "Hospital Oncológico Gral. Solon Espinosa Ayala"Quito-Ecuador

ABSTRACT

Objectives: to describe the demographic variables, racial groups and to evaluate the survival in women older and younger than 60 years old diagnosed with HER-2 breast cancer positive.

Methods: A retrospective analysis was carried out during the years 2010 and 2015 with the diagnosis of HER-2 breast cancer positive, the crossing of variables was performed with Chi square or Fisher's exact test when necessary, the estimation of Survival was performed using the Kaplan Meier method.

Results: The present data reported an overexpression of HER2 in 11.58%, occurring more frequently in women under 60 years old in 82.9%, with the most frequent stages II and III, indigenous people as Afro-Ecuadorians represent HER-2 positive in 22.2% being more frequent in the group of Latin Americans non-indigenous or afro-ecuadorians, with respect to survival, women with positive HER-2 breast cancer under 60 years old have an average survival of 62.3 months and those over 60 years old 66.2 months; 95% IC (58.7 - 67.33 months).

Conclusion: these are the first analyzes in Ecuador descriptively regarding HER2 breast cancer, it is necessary to know the response rate in different scenarios such as neoadjuvant, adjuvant, metastatic, as well as identify the reality of breast cancer in groups of vulnerable women as are indigenous and afro-descendant people.

KEYWORDS : Breast, cancer, HER-2, Quito, Ecuador

INTRODUCTION

The breast cancer in Ecuador according to the national registry of tumors occupies the first place in women of incidence and the third in mortality. (1) more recent analyzes of study to 3 decades of cancer in Ecuador reports that the breast cancer is increased among the women of Quito .

By Corral et al, breast cancer in Ecuador, its incidence and mortality increased significantly (average annual percentage 1.9 and 2.7), however in the last three five-year periods the mortality rates remained stable, behavior expressed in the important changes in the lifestyle that women have had, especially in the urban area and in cities with greater economic development. (2)

The decision of individualized treatment is currently based on tumor size, lymph node status, presence of estrogen progesterone receptors, HER-2 status, and metastatic activity; to this we must take into account that the human epidermal growth factor-2 receptor (HER2) receptor is over-expressed or amplified in 20-25% of human breast carcinomas. (3,4,13,14,5-12)

It has already been established that women with breast cancer HER 2 positive have a higher risk of progression and death, which is why strategies have been developed to block the signaling pathway allowing control of this biologically more aggressive variety.

The objectives of this research are to describe the demographic variables, racial groups and to assess the survival in older and younger women of 60 years old.

METHODOLOGY

The 1010 Health records of women with the diagnosis of breast cancer in the "Hospital oncológico Gral. Solón Espinosa Ayala" were reviewed during the years 2010 and 2015 , from which those women who presented overexpression of HER2 were selected.

The cases were identified through the National Registry of Tumors and the hospital registry department; of those women older than 18 years old, and confirmed diagnosis of early, locally advanced and metastatic breast cancer with overexpression of HER 2 determined by immunohistochemistry and FISH or SISH test when necessary.

A general descriptive analysis of the group of selected patients was performed, overall survival, time of progression, the results were obtained and described by means of absolute frequency determination and measures of central tendency. The crossing of variables was performed with contingency tables submitted to association using Chi-square statistics or Fisher's exact test when necessary, the survival estimate was performed using the Kaplan Meier method and the survival functions were compared using the Long Rank test.

The information obtained from the digital medical records was analyzed using the statistical package Excel and SPSS.

RESULTS

From the analyzed group of 1010 women, 117 women presented overexpression of HER-2 (11.58%); We studied two population groups under 60 years old and over 60 years old, the group of women under 60 years old constitutes 82.9% of the sample which denotes a greater proportion in a group of young women, there was no statistical difference in terms of breast laterality, only (10/8.5%)of women HER2 was identified in advanced stages, with an important data that up to December 2018 the general survival (stage I-IV) was 85.5% of the patients, more details regarding a descriptive analysis of the clinical stage, pathology, Histological grade, chemotherapy scheme and racial group is described in Table 1.

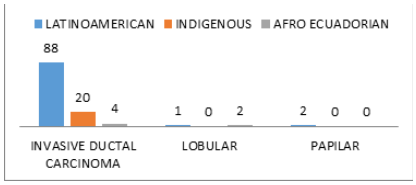
TABLE 1. HER-2 positive breast cancer, descriptive analysis

VARIABLE		N	%
AGE	< 60 years old	97	82.9
	>60 years old	20	17.1
		117	100
LATERALITY	RIGHT	60	51.3
	LEFT	57	48.7
		117	100
CLINICAL STAGE	EIA	19	16.2
	EIB	2	1.7
	EIIA	22	18.8
	EIIB	18	15.4
	EIIIA	27	23.1
	EIIIB	12	10.3
	EIIIC	7	6.0
	EIV	10	8.5
	Total	117	100.0
CONDITION	DEAD	17	14.5
	LIVE	100	85.5
	TOTAL	117	100.0
PATHOLOGY (INFILTRANT)	DUCTAL	112	95.7
	LOBULAR	3	2.6
	PAPILAR	2	1.7
	Total	117	100.0
HISTOLOGICAL DEGREE	1	17	14.5
	2	80	68.4
	3	20	17.1
		117	100.0
RACE	LATINOAMERICAN	91	77.8
	INDIGENOUS	20	17.1
	AFRO ECUADOR	6	5.1
	Total	117	100.0
TREATMENT*	TRASTUZUMAB	10	8.5
	TCH	35	29.9
	TAC	15	12.8
	TAC + QX + H	6	5.1
	TAC + H	30	25.6
	TH	1	.9
	CMF + H	1	.9
	AC	3	2.6
	AC + H	13	11.1
	AC + P + H	2	1.7
	CONTROL	1	.9
	Total	117	100.0

*TCH (docetaxel, carboplatin and Trastuzumab), TAC (docetaxel, doxorrubicin, ciclophosfamid), QX (surgery), H (trastuzumab/Herceptin), AC (doxorrubicin, ciclophosfamid), P (Pertuzumab)

A first analysis of HER-2 positive breast cancer was performed in relation to the racial group, with a lower incidence in the group of indigenous (17.1%) and Afro-Ecuadorians(5,1%) in total 22.2%; as well as, a correlation between the histological type and the racial group as represented in Figure 1

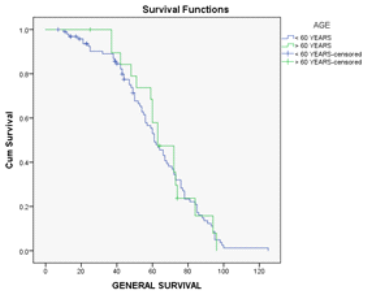
FIGURE 1.- HER-2 positive breast cancer and correlation between racial group and histological type.



Chi-square 24.5 p= 0.000; HR. 0.001 IC 95% (0.000 -0.0027)

A general survival analysis was carried out between the two age groups, and it was observed that women with HER-2 positive breast cancer under 60 years old had a mean of 62.3 months and those over 60 years old 66.2 months, IC 95% (58.7- 67.3 months) Figure 2.

FIGURE 2.- General survival analysis in patients with HER-2 positive breast cancer



DISCUSSION

Perhaps the most relevant data of breast cancer in Ecuador are those presented by Chico in his thesis in which he reports in Quito a HER-2 expression of (15 / 14.3%) of a sample of (105/100%) individuals, without a statistically significant difference between women under and over 50 years old, an average survival of 29.34 months and a global survival of 32.52 months, with weaknesses such as lack of differentiation in terms of clinical stage and reporting of type of treatment received (15), in our research we can see an incidence of 11.58%, perhaps a little lower in relation to a larger global sample.

The results of this study show that HER2 positive breast cancer is detected in local or locally advanced stages and in young women data similar to those reported in Latin American countries such as Colombia and Mexico, this fact being striking because of the detection of this type of cancer in women over 60 years old in the United States and England. (16.17)

Regarding racial groups, we do not have information from previous studies in Ecuador. However, it is worth noting the lower proportion of groups of indigenous people and Afro-descendant groups, perhaps due to the fact that in our country there are mainly poor and illiterate groups.

Several chemotherapy schemes have been reported during this time because there is an evolution in terms of treatment, however as of 2016 the TCH scheme is established as a treatment standard in both neoadjuvant and adjuvant and metastatic so that at the moment we must study the response in our country to this treatment.

CONCLUSION

Although the main weakness of this study is that it is a retrospective analysis, it is important to carry out this type of research to determine the reality of an oncology care center and be able to guide the treatment to a group of patients, for the time being this is an analysis descriptive and work is being done in neoadjuvant, adjuvant and HER2 breast metastatic tumors that will be reported in future publications.

REFERENCES

1. SOLCA. EPIDEMIOLOGÍA DEL CÁNCER EN QUITO 2006-2010 [Internet]. 15th ed. Cueva P, editor. Quito; 2014. Available from: http://www.estadisticas.med.ec/Publicaciones/PUBLICACION-QU-2006-2010.pdf
2. Corral Cordero F, Cueva Ayala P, Yépez Maldonado J, Tarupi Montenegro W. Trends in cancer incidence and mortality over three decades in Quito - Ecuador. Colomb Med [Internet]. 2018 Jan 1;49(1):35–41. Available from: http://colombiamedica.univalle.edu.co/index.php/comedica/article/view/3785
3. Gianni L, Eiermann W, Semiglazov V, Lluch A, Tjulandin S, Zambetti M, et al. Neoadjuvant and adjuvant trastuzumab in patients with HER2-positive locally advanced breast cancer (NOAH): follow-up of a randomised controlled superiority trial with a parallel HER2-negative cohort. Lancet Oncol [Internet]. 2014 May;15(6):640–7. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1470204514700804
4. Gianni L, Eiermann W, Semiglazov V, Manikhas A, Lluch A, Tjulandin S, et al. Neoadjuvant chemotherapy with trastuzumab followed by adjuvant trastuzumab versus neoadjuvant chemotherapy alone, in patients with HER2-positive locally advanced breast cancer (the NOAH trial): a randomised controlled superiority trial with a parallel HER. Lancet [Internet]. 2010 Jan;375(9712):377–84. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0140673609619644
5. Dent S, Oyan B, Honig A, Mano M, Howell S. HER2-targeted therapy in breast cancer: A systematic review of neoadjuvant trials. Cancer Treatment Reviews. 2013.
6. Smith I, Procter M, Gelber RD, Guillaume S, Feyereislova A, Dowsett M, et al. 2-year follow-up of trastuzumab after adjuvant chemotherapy in HER2-positive breast cancer: a randomised controlled trial. Lancet. 2007;
7. Baselga J, Cortés J, Kim S-B, Im S-A, Hegg R, Im Y-H, et al. Pertuzumab plus Trastuzumab plus Docetaxel for Metastatic Breast Cancer. n engl j med. 2012;366:109–28.
8. Cortés J, Baselga J, Im YH, Im SA, Pivot X, Ross G, et al. Health-Related quality-Of-Life assessment in CLEOPATRA, a phase III study combining pertuzumab with trastuzumab and docetaxel in metastatic breast cancer. Ann Oncol. 2013;
9. Swain SM, Kim SB, Cortés J, Ro J, Semiglazov V, Campone M, et al. Pertuzumab, trastuzumab, and docetaxel for HER2-positive metastatic breast cancer (CLEOPATRA study): Overall survival results from a randomised, double-blind, placebo-controlled, phase 3 study. Lancet Oncol. 2013;
10. Baselga J, Swain SM. CLEOPATRA: A phase III evaluation of pertuzumab and trastuzumab for HER2-positive metastatic breast cancer. Clin Breast Cancer. 2010;
11. Slamon DJ, Leyland-Jones B, Shak S, Fuchs H, Paton V, Bajamonde A, et al. Use of Chemotherapy plus a Monoclonal Antibody against HER2 for Metastatic Breast Cancer That Overexpresses HER2. N Engl J Med. 2001;
12. Roche H, Vahdat LT. Treatment of metastatic breast cancer: second line and beyond. Ann Oncol [Internet]. 2011 May 1;22(5):1000–10. Available from: https://academic.oup.com/annonc/article-lookup/doi/10.1093/annonc/mdq429
13. Quevedo Gutiérrez KM, Landa Fernández AM, García Barrera V. HER-2/neu en cáncer de mama localmente avanzado. Gac Mex Oncol [Internet]. 2016 May;15(3):108–15. Available from: http://linkinghub.elsevier.com/retrieve/pii/S1665920116300256
14. Carranza Hernan, Vargas Carlos CA. Treatment with Trastuzumab In Different Scenarios Of Breast Cancer: Experience in the Fundación Santa Fe de Bogotá. Rev Colomb CanCeRol. Bogota; 2007;1(11):23–31.
15. Chico Marcelo. IMPLICACIONES PRONÓSTICAS DE LOS SUBTIPOS MOLECULARES POR INMUNOHISTOQUÍMICA DE CÁNCER DE MAMA EN EL HOSPITAL DE ESPECIALIDADES EUGENIO ESPEJO, UNIDAD DE MASTOLOGÍA. [Internet]. Pontífice Universidad Católica el Ecuador; 2015. Available from: http://repositorio.puce.edu.ec/bitstream/handle/22000/8577/TR ABAJO DE TESIS. DR CHICO..pdf?sequence=1
16. Claudia R. Descripción clínica, anatomopatológica y de tratamiento de pacientes con cáncer de mama en una unidad de mastología de la ciudad de Medellín, Colombia. 2006- 2013. Rev CES Med. 2015;29(2):181–90.
17. Aziz M. Supervivencia de pacientes con cancer e mama. Analisis por factores pronsotico, clinicos y patologicos. Ginecol Obs Mex. 2016;84(8):498–506.