PS5-05-03 Survival Outcomes of Chemotherapy Versus Endocrine Therapy in Symptomatic Medullary Infiltration from Metastatic Breast Cancer: A Retrospective Real-World Study

Raelson R. Miranda, MD[1]; Leticia M. Graziano, MD[1]; Gabrielle C. Trofa, MD[1]; Luisa C. D. F. Costa, MD[1]; Wesley A. L. de Lima, MD[1] and Laura Testa, MD[1]

[1]Clinical Oncology Department. Instituto do Câncer do Estado de São Paulo. São Paulo, Brazil

Introduction

Symptomatic medullary infiltration (SMI) in metastatic breast cancer is rare and associated with significant hematologic compromise. No standard treatment exists, and data-guided management is limited. Retrospective studies suggest similar overall survival (OS) rates with chemotherapy (CT) and endocrine therapy, which combines aromatase inhibitors (AIs) and CDK4/6 inhibitors. However, direct comparisons between CT and AI alone are scarce. This study evaluated OS in patients with SMI treated with CT or AI-based endocrine therapy in the first- or second-line setting.

Methods and Materials

We retrospectively reviewed records of patients with metastatic breast cancer who underwent bone marrow biopsy at a single academic center from 2015 to 2023. Inclusion criteria were histologically confirmed SMI, symptomatic cytopenias, and receipt of either CT or hormone therapy (HT; AI or tamoxifen ± ovarian suppression, excluding CDK4/6 inhibitors) in the first or second line. Clinical, pathological, and survival data were analyzed. OS was estimated using Kaplan-Meier methods; independent prognostic factors were assessed via multivariable Cox regression.

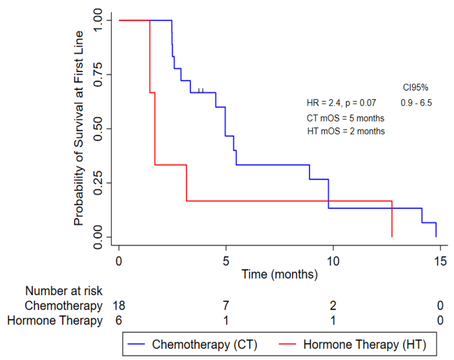
Table 1. Characteristics of patients

Charactheristic	
Age (median, years)	53
Sex	
Female	24 (100%)
Race	
White	19 (76%)
Black	4 (16%)
Latin	2 (8%)
HR - positive	24 (100%)
HER2 3+	5 (21%)
KI67 (median, %)	30
Anemia	23 (96%)
Dacriocistocys	14 (58%)
Thrombocytopenia	15 (62%)
Leukopenia	8 (33%)
Bone Metastasis	24 (96%)
Missing	1 (4%)
Sites of Metastasis	
< 3	1 (4%)
≥ 3	23 (96%)

Table 1. Continuation

Charactheristic	
ECOG	
0	1 (4%)
1	10 (40%)
2	10 (40%)
3	3 (12%)
Missing	1 (4%)
Histologic Type	
Ductal	20 (83%)
Lobular	4 (17%)
1th Line Treatment	
Capecitabine	5 (21%)
THP*	2 (8%)
Weekly Paclitaxel	6 (25%)
AC**	3 (12.5%)
CMF	1 (4.2%)
Anastrozole	3 (12.5%)
Letrozole	3 (12.5%)
Tamoxifen	1 (4.2%)
2nd Line Treatment	
Capecitabine	9 (37.5%)
Vinorelbine	2 (8%)
Gemcitabine	1 (4.2%)
Cisplatin/gemcitabine	1 (4.2%)
Exemestane	3 (12.5%)
Tamoxifene	1 (4.2)

* Docetaxel, trastuzumab, pertuzumab
** Doxorubicin, Cyclophosphamide



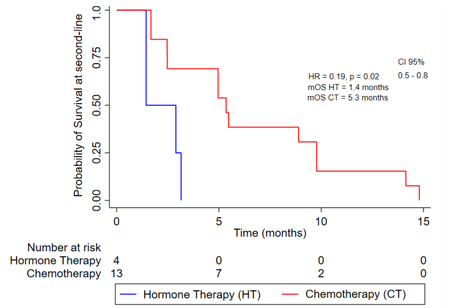


Figure 1. Overall survival by type of treatment in 1th and 2nd line

Table 2.Cox proportional model for First-Line and second-Line

Variable	First-Line		Second-Line	
	HR	p	HR	p
CT Vs HT	4536	0.01	0.8	0.9
Age	0.9	0.5	1.2	0.02
Race				
Caucasian/Black	58	0.2	0.6	0.8
Caucasian/Latin	0.01	0.01	0.01	0.03
ECOG				
0 Vs 1	5	0.4	-	-
0 Vs 2	2	0.7	25	0.05
0 Vs 3	0.5	0.7	369	0.04
HER2 0-2+ Vs 3+	50	0.01	13	0.05
Ki67	1.11	0.11	1.12	0.07
Anemia	610	0.12	-	-
Dacriocitosys	5.6	0.24	0.4	0.5
Thrombocytopenia	11	0.07	0.04	0.2
Leucopenia	22	0.08	22	0.06
Sites of Metastasis				
< 3 Vs ≥ 3	4.3	0.004	-	-

Conclusions

In this real-world cohort of patients with SMI from metastatic breast cancer, chemotherapy was associated with improved OS in the first-line setting compared to hormone therapy. No survival benefit was observed in the second line. HER2-positivity, advanced age, poor performance status, and extensive metastatic disease were associated with worse outcomes. Latin ethnicity was consistently protective across treatment lines.

Contact

Raelson R. Miranda
Instituto do Câncer do Estado de São Paulo I Universidade de São Paulo - USP
raelson.m@hc.fm.usp.br
Icesp.org.br
Phone: +55 11 3893-2686

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