Five-year survival outcomes after systemic therapy in older patients with early-stage triple negative breast cancer at Memorial Sloan Kettering Cancer Center

Singh JC, Kulkarni A, Dang C, Dente-Ferguson W, Ehrich F, Chen Y, Alexander K, Shahrokni A, Robson M, Norton L, Lake D

San Antonio Breast Cancer Symposium
December 7-12, 2025

Abstract

Approximately 15% cases of TNBC are diagnosed in individuals over the age of 70 [1]. Older patients remain under-represented in clinical trials [2]. There are consistent differences in treatment patterns in older patients with cancer compared to their younger counterparts [3]. Some studies have reported inferior Breast Cancer Specific Survival (BCSS) outcomes because of undertreatment in older patients [4,5]. We conducted a retrospective review of patients 70 years of age and older with stage I-III TNBC who were treated at Memorial Sloan Kettering Cancer Center (MSKCC), with the goal of describing the clinical practice patterns and outcomes.

Methods and Materials

Medical records of patients with patients aged ≥ 70 years diagnosed with stage I-III triple negative breast cancer from January 1st, 2015 through December 31st, 2019, were abstracted. Charts were analyzed for patient demographics, cancer stage, pathology reports, surgical and systemic therapy data. Chemotherapy (C) and non-chemotherapy (NC) groups were compared based on baseline characteristics, toxicities, and outcomes. We compared patient characteristics by chemotherapy type using Wilcoxon rank sum test, Pearson's Chi-squared test, and Fisher's exact test. Overall Survival (OS), Breast Cancer Specific Survival (BCSS), and Recurrence Free BCSS (RF-BCSS) were examined using Cox proportional hazards models. All statistical analyses were conducted using R.

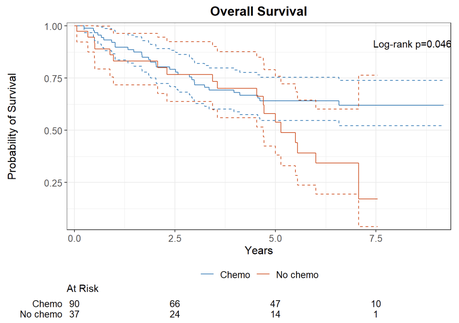
Results

- Total 147 patients included.
- Median age : 75 years
- Patients with stage I, II, and III disease were 64 (44%), 66 (45%), 17 (12%), respectively.
- Comprehensive geriatric assessment performed in 18%

Chemo received by 93 (63%) patients

- Patients receiving chemo were younger (med age 78 (C) vs. 74,(NC) p<0.001), higher stage disease (stage II-III in 60% © and 40% (NC), p=0.005)
- No difference observed in survival outcomes in C or NC groups.
- No difference observed in the survival outcomes between AC versus CMF regimens. CMF group had significantly higher stage I patients.

Figure 1: Overall Survival: C vs. NC (T1a and microinvasive cancer excluded)

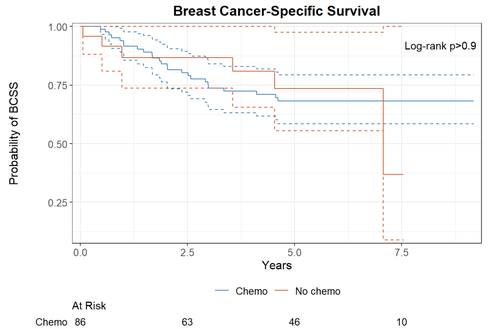


Below is the associated hazard ratio, generated using a univariable Cox model.

Characteristic	HR[1]	95% CI[1]	p-value
received_chemo			
No chemo	—	—	
Chemo	0.56	0.32, 1.00	0.049

[1] HR = Hazard Ratio, CI = Confidence Interval

Figure 2: Breast Cancer Specific Survival: C vs. NC (T1a and microinvasive cancer excluded)

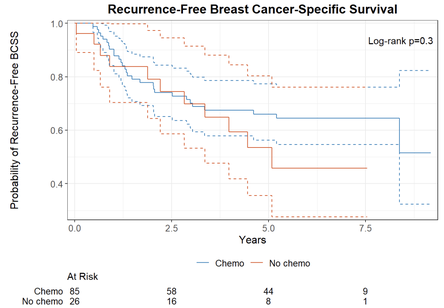


Below is the associated hazard ratio, generated using a univariable Cox model.

Characteristic	HR[1]	95% CI[1]	p-value
received_chemo			
No chemo	—	—	
Chemo	1.00	0.41, 2.45	>0.9

[1] HR = Hazard Ratio, CI = Confidence Interval

Figure 3 Relapse-Free Breast Cancer Specific Survival: C vs. NC (T1a and microinvasive cancer excluded)



Below is the associated hazard ratio, generated using a univariable Cox model.

Characteristic	HR[1]	95% CI[1]	p-value
received_chemo			
No chemo	—	—	
Chemo	0.68	0.34, 1.37	0.3

[1] HR = Hazard Ratio, CI = Confidence Interval

Chemotherapy regimens

CHEMOTHERAPY REGIMENS	
Treatment Regimen	N= 92
CMF	39 (42%)
ACT	23 (25%)
TC	7 (7.6%)
Taxol	5 (5.4%)
ACT + carboplatin	4 (4.3%)
AT	3 (3.3%)
CMF + taxol	3 (3.3%)
ACT + CMF	2 (2.2%)
Taxol + carboplatin	2 (2.2%)
Abraxane	1 (1.1%)
Carboplatin + etoposide + A	1 (1.1%)
CF	1 (1.1%)
MF	1 (1.1%)

CMF: Cyclophosphamide/ Methotrexate/ 5 fluorouracil, ACT: Doxorubicin Cyclophosphamide Paclitaxel, TC: Docetaxel Cyclophosphamide, CF: Cyclophosphamide / 5 Fluorouracil, MF: Methotrexate/ 5 fluorouracil

Conclusions

- In our single institutional experience, we observed that two-thirds of older patients with early-stage TNBC received systemic polychemotherapy.
- C-group had an improved OS but not BCSS and RF-BCSS. Improved OS observed in the C-group was likely driven by non-oncological factors.
- We observed no difference in survival outcomes between CMF and ACT, the two most commonly used chemotherapy regimens.
- Clinical heterogeneity has been described in TNBC and biological differences between treating older and younger patients have been speculated.

References

1. Bauer KR, et al . Cancer. 2007;109(9):1721-8.
2. Hutchins LF et al. N Engl J Med. 1999;341(27):2061-7.
3. Weiss A et al.. Ann Surg Oncol. 2013;20(10):3274-8.
4. Kozak MM et al. Breast J. 2019;25(3):469-73.
5. Zhu W et al. PLoS One. 2015;10(5):e0128345.
6. Aapro M et al, Ann Oncol. 2012;23 Suppl 6:vi52-5.