

Outcomes and Utilization of Adjuvant Chemotherapy With and Without an Anthracycline in Node-Positive, Triple-Negative Breast Cancer: Analysis of SEER-Medicare Data



Stephanie Lakritz, MD; Anna Schreiber, MD; Elizabeth Molina, MPH; Elisabeth Meyer, MPH; Cathy J. Bradley, PhD; Jennifer R. Diamond, MD
University of Colorado Anschutz Medical Campus, Aurora, CO

RESULTS

BACKGROUND

- Triple-negative breast cancer (TNBC) is a subtype of breast cancer associated with an aggressive clinical course
- Adjuvant chemotherapy has led to improved survival and decreased risk of recurrence
- In node-positive disease, anthracycline and taxane therapy (ATAX) regimens have been shown to be more efficacious compared to non-anthracycline-containing, taxane-based regimens (TAX)
- However, data investigating outcomes and utilization of adjuvant chemotherapy in older women with node-positive, TNBC remain to be explored

METHODS

- Using the Surveillance, Epidemiology, and End Results (SEER)-Medicare database, we identified 1,106 women with node-positive, TNBC diagnosed at age > 65 between 2010-2015.
- We compared patient and clinical characteristics according to adjuvant chemotherapy regimen (chemotherapy versus no chemotherapy and ATAX versus TAX).
- Logistic regression was performed to estimate the odds ratios (OR) and 95% confidence intervals (CIs)
- Kaplan Meier survival curves were generated to estimate three-year overall survival (OS) and three-year cancer specific survival (CSS).
- Cox proportional hazards models were used to analyze OS and CSS while controlling for patient and tumor characteristics

Demographic and Logistic Regression Charts

Number of Patients Receiving Chemotherapy vs No Chemotherapy				
Total Patients, N	No Chemo, N	No Chemo, %	Chemo, N	Chemo, %
1106	339	30.7%	767	69.3%

Number of Patients Receiving TAX vs ATAX				
Total Patients, N	TAX Only, N	TAX Only, %	ATAX, N	ATAX, %
661	297	38.7%	364	47.5%

Logistic Regression Predicting ATAX vs TAX Only			
	Odds ratio	95% Confidence Interval	P-value
Age:			
66 to 75*			
76 and older	0.10	[0.07 – 0.14]	<0.0001
N Stage:			
1-3 nodes positive*			
4+ nodes positive	1.68	[1.16 – 2.44]	0.006
Partner status:			
Partnered*			
Non-partnered	0.61	[0.43 – 0.87]	0.006
Prior cardiac conditions:			
No*			
Yes	0.69	[0.43 – 1.12]	0.133

(* Reference variable)

Forest Plots: Overall Survival

Treatment and Subset	Hazards ratio	95% CI	P-value
Chemotherapy vs. No Chemotherapy			
All Cases	0.69	(0.54 - 0.89)	0.004
1-3 Nodes Positive	0.71	(0.50 - 1.01)	0.054
4 + Nodes Positive	0.62	(0.42 - 0.92)	0.016
Taxane + Anthracycline vs. Taxane			
All Cases	0.98	(0.70 - 1.37)	0.904
1-3 Nodes Positive	1.29	(0.81 - 2.08)	0.286
4 + Nodes Positive	0.69	(0.41 - 1.15)	0.153
Taxane + Anthracycline vs. Taxane			
All Cases	0.98	(0.70 - 1.37)	0.904
66-75 y/o, 1-3 nodes positive	1.56	(0.87 - 2.78)	0.133
66-75 y/o, 4+ nodes positive	0.69	(0.34 - 1.42)	0.312
76 years +, 1-3 nodes positive	1.36	(0.43 - 4.31)	0.603
76 years +, 4+ nodes positive	0.49	(0.13 - 1.76)	0.273

Kaplan-Meier Survival Analysis

Figure 1: OS TAX vs ATAX

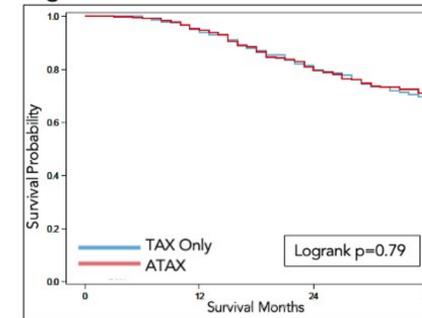


Figure 2: CSS TAX vs ATAX

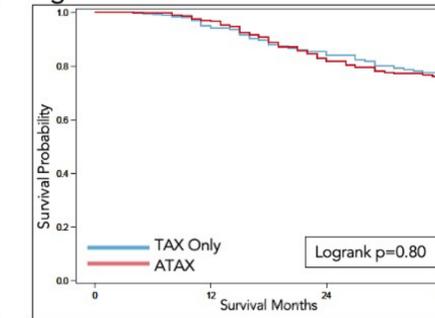


Figure 3: OS By LN + TAX vs ATAX

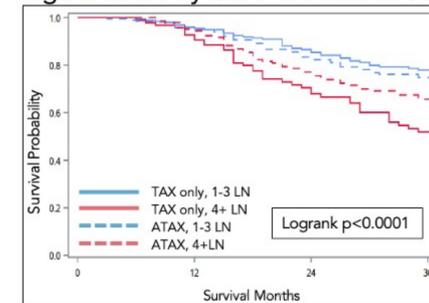


Figure 4: CSS By LN + TAX vs ATAX

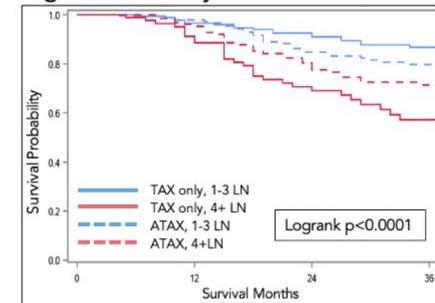


Figure 5: OS 1-3 LN + ATAX vs TAX

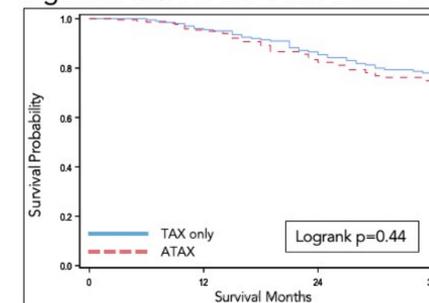


Figure 6: CSS 1-3 LN + ATAX vs TAX

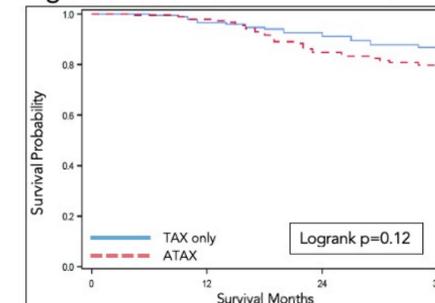


Figure 7: OS 4+ LN + ATAX vs TAX

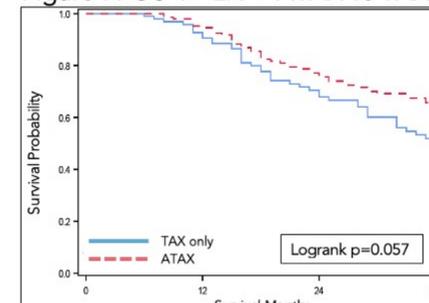
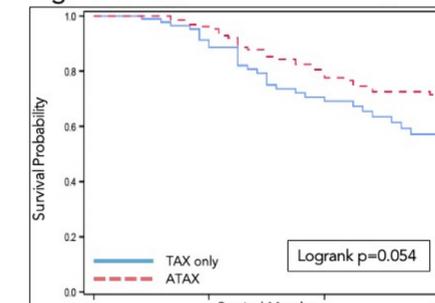


Figure 8: CSS 4+ LN + ATAX vs TAX



DISCUSSION

- Of the 1,106 patients in our cohort, 767 (69.3%) received adjuvant chemotherapy, and 661 (86.1%) of those patients received a taxane-based adjuvant chemotherapy
- Independent variables predicting the use of ATAX vs TAX included younger age, more lymph node (LN) involvement, and marital/partner status.
- In patients with prior cardiac conditions, there was a lower odds ratio of receiving ATAX vs TAX but this was not statistically significant.
- Three-year OS and CSS for patients who received ATAX versus TAX were similar at 74.2% versus 72.7% (p=0.79) and 82.8% versus 83.7% (p=0.80), respectively (Figures 1 & 2)
- When OS and CSS were stratified by lymph nodes status, there was a separation seen in OS and CSS Kaplan-Meier survival curves (Figures 3 & 4)
- There was no statistically significant difference in OS/CSS in patients with 1-3 LN who received ATAX vs TAX (Figures 5 & 6).
- Among patients with 4 or more LN involvement there was a trend towards improved OS/CSS in patients receiving ATAX vs TAX (Figures 7 & 8)
- There is a non-statistically significant trend in improved survival among patients with higher LN involvement, even among older patients (76 years and older), (See Forest Plots)

IMPLICATIONS

- Among older women with node-positive TNBC, most patients received adjuvant chemotherapy with the most common regimen being a taxane-based regimen (either ATAX or TAX).
- Younger age, higher stage, and lack of comorbidities correlated with the use of ATAX compared to TAX.
- Older women with 4 or more positive LNs do not have worse survival and may have improved 3-year OS and CSS if treated with ATAX vs TAX