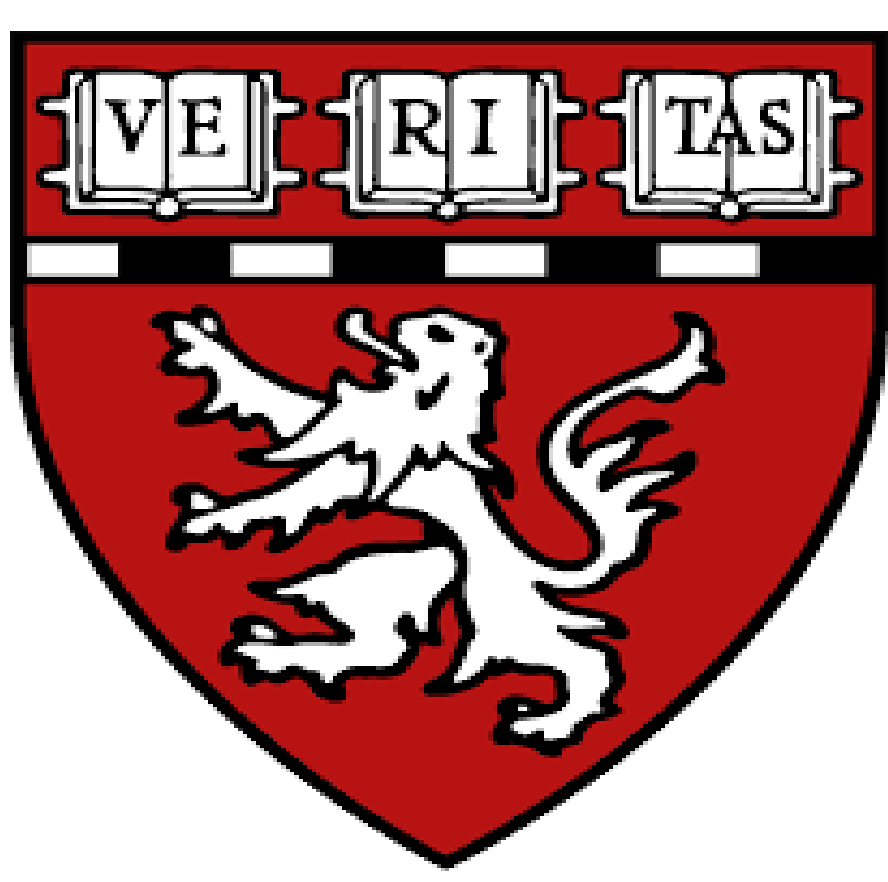




# Management of Positive Sentinel Lymph Node Biopsy following Mastectomy



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## BACKGROUND

- Axillary management of nodal disease can have a significant impact on loco-regional control and survival.
- Recent clinical trials suggest that a positive sentinel lymph node biopsy in select patients no longer mandates a completion axillary lymph node dissection (ALND).
- In patients undergoing mastectomy found to have sentinel node metastasis, axillary radiotherapy may provide comparable regional control, with less morbidity.
- The combination of ALND and axillary radiotherapy may also be considered.
- Our objective was to perform a comparative evaluation of the management of regional metastasis following SLNB in clinically node negative patients undergoing mastectomy to compare clinical outcomes among the different modalities of axillary management.

## METHODS

- In a retrospective review of the National Cancer Database, the population consisted of women with T1-2 primary invasive breast cancer from 2012-2015 who were clinically node negative with positive lymph node metastasis at the time of a mastectomy.

- Patients were evaluated based on clinically significant demographic characteristics and the axillary treatment strategies of ALND alone, post mastectomy radiation therapy (PMRT) alone, combined ALND + PMRT, or no further treatment (NFT).

- A multivariable analysis and Cox proportional hazards ratio were performed.

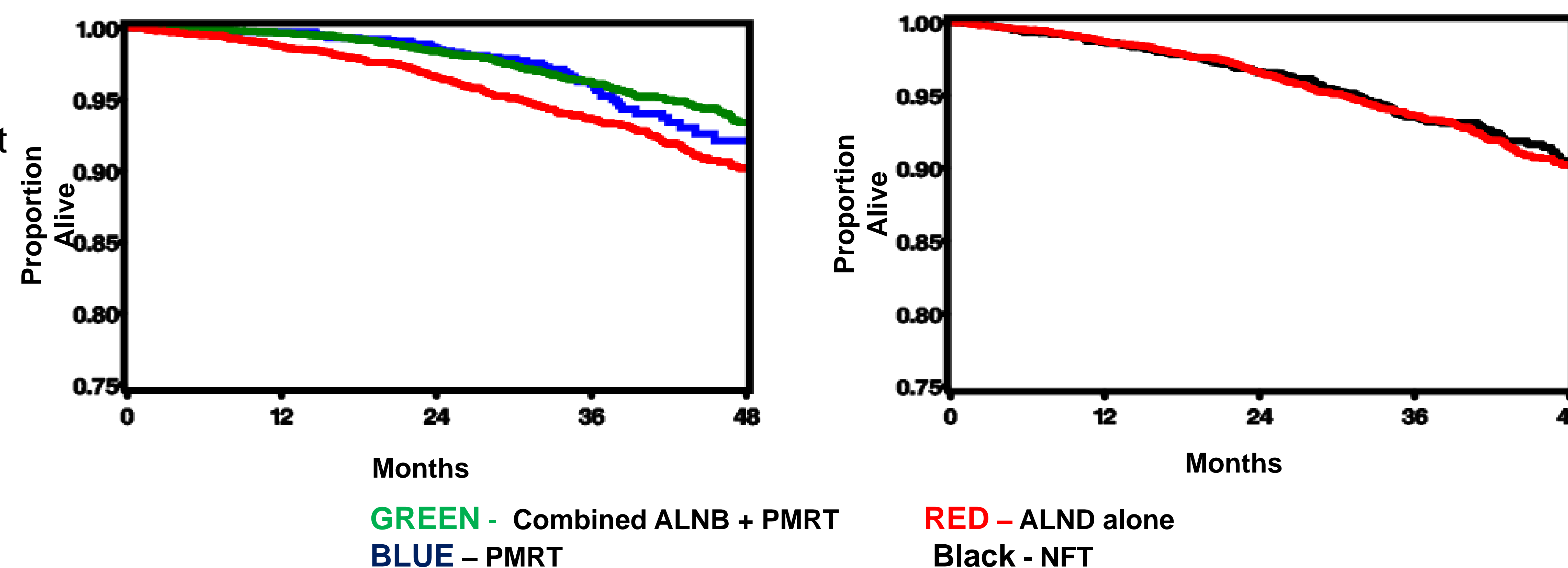
## Proportional hazard regression models for mortality

Characteristic	Hazard Ratio	Confidence Interval	p-value	Characteristic	Hazard Ratio	Confidence Interval	p-value
<b>Axilla treatment</b>				<b>AREA</b>			
No treatment	1[Ref]			Metro area	1[Ref]		
Adjuvant Radiation	0.757	0.548-1.048	p=0.0134	Other	1.078	0.874-1.329	p=0.4826
Adjuvant Radiation & ALND	0.519	0.398-0.676	p<0.0001	<b>Type of Facility</b>			
ALND	0.974	0.789-1.203	p=0.6543	Academic/Research	0.763	0.614-0.949	p=0.0149
<b>Age group (years)</b>				Other/Unknown	1[Ref]		
<40	0.788	0.516-1.201		<b>Pathological Stage of Tumor</b>			
40-54	1[Ref]			T1	1[Ref]		
55-69	1.280	1.018-1.608	p<0.0001	T2	1.730	1.449-2.066	p<0.0001
>=70	3.382	2.720-4.206		<b>Grade of Tumor</b>			
<b>CDCC<sup>A</sup></b>				Low grade	0.939	0.716-1.232	
0	1[Ref]			Intermediate grade	1[Ref]		p<0.0001
1	1.506	1.230-1.842	p<0.0001	High grade	1.572	1.302-1.897	
2 or greater	3.202	2.455-4.178		<b>Tumor markers</b>			
<b>Income</b>				HR <sup>B</sup> -positive / HER2-negative	1[Ref]		
High SES	0.768	0.635-0.928	p=0.0063	HR-negative / HER2-positive	1.405	0.968-2.039	
Low SES	1[Ref]			HR-positive / HER2-positive	0.897	0.674-1.194	p<0.0001
<b>Insurance</b>				Triple negative	2.928	2.332-3.675	
Insured	1[Ref]			Unknown	1.091	0.694-1.714	
Uninsured	1.006	0.600-1.688	p=0.9808	<b>Nodal stage</b>			
<b>Distance</b>				N1	1[Ref]		
<50 miles	1[Ref]			N2	1.730	1.347-2.221	p<0.0001
>50 miles	1.175	0.881-1.568	p=0.2721	N3	1.976	1.370-2.851	
<b>Volume</b>							
Low volume	1.195	0.872-1.637					
Medium volume	1.010	0.845-1.207	p=0.5307				
High volume	1[Ref]						
<b>Geographics</b>							
Northeast	0.923	0.708-1.204					
Midwest	0.975	0.795-1.195	p=0.9476				
South	1[Ref]						
West	0.993	0.782-1.261					

<sup>A</sup>CDCC: Charlson-Deyo Comorbidity Score

<sup>B</sup>HR: Hormonal Receptor

## Survival analysis among axillary treatment modalities



## RESULTS

- 16,295 women with a positive SLNB at the time of mastectomy were identified, of which 35% proceeded to have an ALND, 12% PMRT, 33% combination therapy, and 19% NFT.
- On multivariable analysis, patients <40 were less likely to have NFT (OR 1.3, CI 1.1-1.6), and ≥70 was more likely (OR 0.6, CI 0.5-0.7).
- Patients treated at high-volume facilities (OR 0.7, CI 0.6-0.8) were less likely to be associated with NFT when compared to low or medium volume centers (OR 0.9, CI 0.8-1.0).
- Tumors with higher grade and higher nodal involvement were less likely to be associated with NFT (p<0.0001).
- There was a 48% decrease in mortality in patients treated with combined therapy compared to NFT (HR 0.52, CI 0.40-0.68).
- No significant impact on mortality was observed with ALND alone.

## CONCLUSIONS

- In patients undergoing mastectomy found to have sentinel node metastasis, combination therapy with both PMRT and ALND was associated with decreased mortality.
- Further characterization of patient and tumor features may help identify patients best suited for combined therapy.