

R Bhat, FU Garcia, S Soundararajan. Drexel University College of Medicine, Philadelphia, PA.

Background: Among the molecular subtypes of invasive breast carcinomas (BCa), luminal A subtype (ER positive, Her2/neu negative) tumors are associated with a good prognosis, while luminal B (ER positive, Her2/neu positive) tumors are associated with an intermediate prognosis. **Aim:** To compare the Nottingham Prognostic Index (NPI) in luminal type A and B BCa and determine the role of positive Ki-67 (>20%) and p53 (>20%) in these subtypes.

Design: A total of 223 BCa (187 luminal A (ER+, and/or PR+, HER2-); 36 luminal B (ER+, and/or PR+, HER2+) out of 1094 cases from DUCOM Pathology from 1997-2008, with nodal status information and prognostic panel performed and read by image analysis, were included in the study. These were further classified into prognostic groups using the NPI (<3.4, 3.4 – 5.4, and >5.4). Values of Ki67 and p53 for each prognostic group as well NPI component were evaluated. Statistical analysis was done with Student's t test ($p < 0.05$).

Results:

Ki67 and p53 in Prognostic Subgroups of Luminal A and Luminal B Breast Carcinomas

	NPI < 3.4	NPI < 3.4	NPI 3.4 - 5.4	NPI 3.4 - 5.4	NPI > 5.4	NPI > 5.4
	Luminal A	Luminal B	Luminal A	Luminal B	Luminal A	Luminal B
Number of cases (%)	N= 69 (36.8%)	N= 7 (19.4%)	N= 82 (43.8%)	N=15 (41.6%)	N= 36 (19.3%)	N= 14 (38.8%)
NPI (Mean±S.D)	2.71±0.49	2.87±0.68	4.106±0.53	4.64±0.32**	6.26±0.82	6.53±0.75
Ki67% (Mean±S.D)	12.53±12.2	31.8±19.6*	18.67±12.44	29.4±15.4*	26.59±21.3	27.5±14.1
p53% (Mean±S.D)	5.29±12.9	25.79±32.5	5.44±11.89	20.5±25.7*	4.99±13.96	14.4±19.7

student's t test, ** $p < 0.001$; * $p < 0.05$ (Luminal A vs Luminal B)

Conclusions: 1. Luminal A type BCa is associated with better prognosis (NPI >5.4) when compared with Luminal B type BCa (38 vs 19%). 2. In the intermediate prognostic group NPI 3.4 to 5.4, the number of Ki-67 and p53 positive tumors is significantly higher in luminal B type ($p < 0.05$) than type A BCa (data not shown). 3. The Her2 status of luminal A type BCa with high Ki-67 and p53 should be reconsidered.