

1451P Breast cancer specific survival (BCSS) in young women <40 years with node negative luminal breast cancer (BC) treated based on tumor gene expression

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Background: BC at a young age is generally associated with poor prognosis, more aggressive treatment, long-term toxicities, and unique psychosocial concerns. Little data is available on outcomes defined by molecular profiles. We characterized BCSS in female patients (pts) <40 y with node negative (N0), hormone receptor positive (HR+), HER2 negative disease who were treated based on 21-gene assay Recurrence Score (RS) result.

Methods: RS results were provided electronically to SEER (US population based cancer registries) per their linkage methods (Petkov et al, npj Breast Cancer, 2016). Eligible pts were diagnosed (Jan 2004 - Dec 2012) with N0 HR+ BC, and had no prior malignancy or multiple tumors. BCSS was analyzed for female pts <40 and ≥40 y with RS results, excluding HER2+ disease. Survival was compared using a log-rank test.

Results: 1,761 of 7,186 pts <40 y (24.5%) had RS results. The proportion of pts <40 with RS < 18, RS 18-30, and RS ≥ 31 was 47%, 42%, and 11%, respectively. 47,644 of 203,033 pts ≥40 y (23.5%) had RS results. The proportion of pts ≥40 y with RS < 18, RS 18-30, and RS ≥ 31 was 56%, 37%, and 8%, respectively. The distribution of tumor size and tumor grade was similar in younger and older pts. Reported CT use increased with increasing RS, and was higher for pts <40 y (p < 0.001). Continuous RS result was associated with BCSS for both <40 and ≥40 y (p < 0.001). 5-y BCSS with RS < 18 was excellent for 820 younger pts <40 y, even in those without reported CT use (Table). Similar results were observed for ages <30 y (n = 120), 30-34 y (n = 411), and 35-39 y (n = 1,230).

Conclusions: This large population-based study of N0 HR+ HER2- BC indicates not all young women have aggressive tumor biology and poor prognosis. Nearly half (47%) of women <40 y have RS < 18 and favorable 5-y BCSS with limited CT use. An important minority (11%) with high RS have worse outcomes despite CT. Longer term follow-up is planned.

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	RS < 18			RS 18-30			RS ≥ 31		
	N	CT (%)	5-y BCSS (95% CI)	N	CT (%)	5-y BCSS (95% CI)	N	CT (%)	5-y BCSS (95% CI)
All Pts (N = 49405)	27308	7%	99.6% (99.4%,99.7%)	18268	35%	98.7% (98.5%,98.9%)	3829	70%	95.4% (94.4%,96.2%)
<40 y (N = 1761)	820	17%	100.0% (100.0%,100.0%)	744	56%	99.8% (98.8%,100.0%)	197	80%	93.8% (85.9%,97.3%)
≥40 y (N = 47644)	26488	6%	99.5% (99.4%, 99.6%)	17524	34%	98.7% (98.4%, 98.9%)	3632	70%	95.5% (94.4%,96.3%)