

Clinicopathological features and survival outcomes of breast cancer in young women (<40 years old) in Hong Kong: a single institution experience

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OBJECTIVES

Breast cancer arising from young women (<40 years) is recognized as a distinct disease entity [1] and is a leading cause of death in young women. This study aimed to review the clinicopathological features and survival outcomes of young female breast cancer in Hong Kong.

METHODS

Young women under age 40 with breast cancer treated at Queen Elizabeth Hospital Hong Kong from 2005-2013 were identified retrospectively via Breast Cancer Registry. 497 patients with operable invasive breast cancer were included. Descriptive analyses were carried out for clinicopathological characteristics, surgery, adjuvant treatment, relapse pattern and deaths. The Kaplan-Meier method was used to obtain disease-free and overall survival results.

RESULTS

Table 1. Demographics and pathological characteristics (n=497)

Age [Median (range)]	[36 (20-39)]	Lymphovascular invasion	
35-39	311 (62.6%)	Yes	162 (32.6%)
<=35	186 (37.4%)	No	280 (56.3%)
Laterality		Unknown	55 (11.1%)
Right	252 (50.7%)	Ki-67	
Left	234 (47.1%)	>= 20% / high	194 (39%)
Bilateral	11 (2.2%)	< 20% / low	96 (19.3%)
Stage		Unknown	207 (41.6%)
I	173 (34.8%)	Multifocal	
II	229 (46.1%)	Yes	35 (7 %)
III	90 (18.1%)	No	462 (93%)
Unknown	5 (1%)	Estrogen receptor (ER)	
T-stage		Positive	373 (75.1%)
T1	248 (50%)	Negative	120 (24.1%)
T2	195 (39.3%)	Unknown	4 (0.8%)
T3	36 (7.3%)	Progesterone receptor (PR)	
T4	17 (3.4%)	Positive	359 (72.2%)
Unknown	1 (0.2%)	Negative	134 (27%)
N-stage		Unknown	4 (0.8%)
N0	280 (56.3%)	HER2 amplification	
N1	146 (29.4%)	Positive	135 (27.2%)
N2	41 (8.2%)	Negative	332 (66.8%)
N3	26 (5.2%)	Unknown	30 (6%)
Unknown	4 (0.8%)	Projected molecular subtype†	
ECE		Luminal A (ER/PR+,HER2-,G1/2)	176(35.4%)
Yes	66 (13.3%)	Luminal B (ER/PR+,HER2+ or G3)	187 (37.6%)
No	406 (81.7%)	HER2 amplified (ER/PR-,HER2+)	34 (6.8%)
Unknown	25 (5%)	Triple negative (ER/PR/HER2-)	52 (10.5%)
Histology		Unknown/uncertain	48 (9.7%)
Ductal	436 (87.1%)	Margin	
Lobular	2 (0.4%)	Clear	472 (95%)
Others	59 (11.9%)	Involved	12 (2.4%)
Grade		Unknown	13 (2.6%)
I	53 (10.7%)		
II	210 (42.3%)		
III	193 (38.8%)		
Unknown	41 (8.2%)		

† Ki-67 not universally available and not included

Table 2. Surgeries and adjuvant treatments (n=497)

Types of breast surgical operations	
Mastectomy	267 (53.7%)
Wide local excision or partial mastectomy	230 (46.3%)
Types of nodal operations	
Sentinel lymph node biopsy (SLNB)	159 (32%)
SLNB followed by axillary dissection	55 (11.1%)
Upfront axillary dissection	279 (56.1%)
No nodal surgery	4 (0.8%)
Neoadjuvant chemotherapy +/- targeted therapy	
Yes	44 (8.9%)
No	453 (91.1%)
Adjuvant chemotherapy +/- targeted therapy	
Yes	389 (78.3%)
No	108 (21.7%)
Adjuvant radiotherapy	
Yes	390 (78.5%)
No	107 (21.5%)
Adjuvant hormonal therapy	
Yes	365 (73.4%)
No	132 (26.6%)

Table 3. Recurrence pattern and deaths

Total no. of relapse	129 (26%)
-Isolated locoregional recurrence	16 (3.2%)
-Distant metastases	96 (19.3%)
-Contralateral primary breast	17 (3.4%)
Site(s) of first distant metastasis (n=96)	
-Liver	43
-Lung/ pleura	58
-Bone	63
-Brain	6
-Others	51
Deaths (any cause)	80 (16.1%)

Median follow-up was 9.1 years. 5-year disease-free survival and overall survival were 82.1% and 90.5% respectively. 9-year disease-free survival and overall survival were 75.5% and 84.3% respectively.

CONCLUSION

Young breast cancers (< 40 years) in Hong Kong tended to have aggressive features including high grade and advanced stage, consistent with Western series [2]. Nevertheless, the results indicated that good survival could be achieved with multimodality treatment.

REFERENCES

- [1] Anders, Carey K., et al. Young age at diagnosis correlates with worse prognosis and defines a subset of breast cancers with shared patterns of gene expression. *Journal of clinical oncology* 26.20 (2008): 3324-3330.
- [2] El Saghir, Nagi S., et al. Effects of young age at presentation on survival in breast cancer. *BMC cancer* 6.1 (2006): 1-8.