Breast Cancer in Women below 40 reported to Sultan Qaboos Cancer Care Comprehensive Center, Retrospective Cohort Study, from 2002-2022

Poster number

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This study found that most of the Omani women aged 40 and below reported to SQCCCRC with breast cancer were positive ER and PR but negative HER2 status receptors. At reporting, most of the women were at an advanced stage and ductal cancer as per the histochemistry. Receptor status (ER, PR) and TNM staging were significant predictors of OS in Omani women diagnosed with breast cancer under or at the age of 40 years.

BACKGROUND

- In 2020, 11.7% of all cancers diagnosed in the world were female Breast Cancer (BC), making it the most common cancer worldwide.
- BC comprises 22.36% of all diagnosed cancers among Omani women.

Aim:
- BC in young women is not studied enough in Oman, for which, this study was conducted.
- To understand the histological and molecular pattern of BC in this age group.
-   To estimate the overall (OS) survival of these patients.

METHODS

- Single institute retrospective cohort study.
- Electronic data was collected from women aged 40 and below treated at Sultan Qaboos Cancer Care Comprehensive Center (SQCCCRC), from 2002-2022.
- Secondary data for socio-demographics, family history of BC, BC histological subtypes, immunohistochemistry (PR, ER, and HER2), and TNM staging were collected.
- Statistics:
* SPSS was used to analyze the data.
* descriptive and inferential analysis.
* The Kaplan-Meier estimator and log-rank test were used for the survival analysis.
* Differences were considered statistically significant at p-value < 0.05.

RESULTS

- A total of 418 patients were included in the study.
- 68 (16.3%) were in the early stage, and 213(51%) of the patients reported a locally advanced stage of BC.
- Positive PR, ER, and HER2 immunostaining were 61.6%, 70%, and 42.2% respectively.
- Patients with positive ER, PR had 68% five-year overall survival (OS) and the patients with negative ER, PR had 67% OS (p=0.024) and (p=0.027) Respectively.
- Early-stage (T1,2 and N0, M 0) patients had 89% five-year overall survival, while locally advanced (T0-1-2, N1-2-3, M0) patients had 80% five-year OS, and metastatic (T0-1-2-3, N1-2, M1) patients had 40% five-year OS (p=0.001).
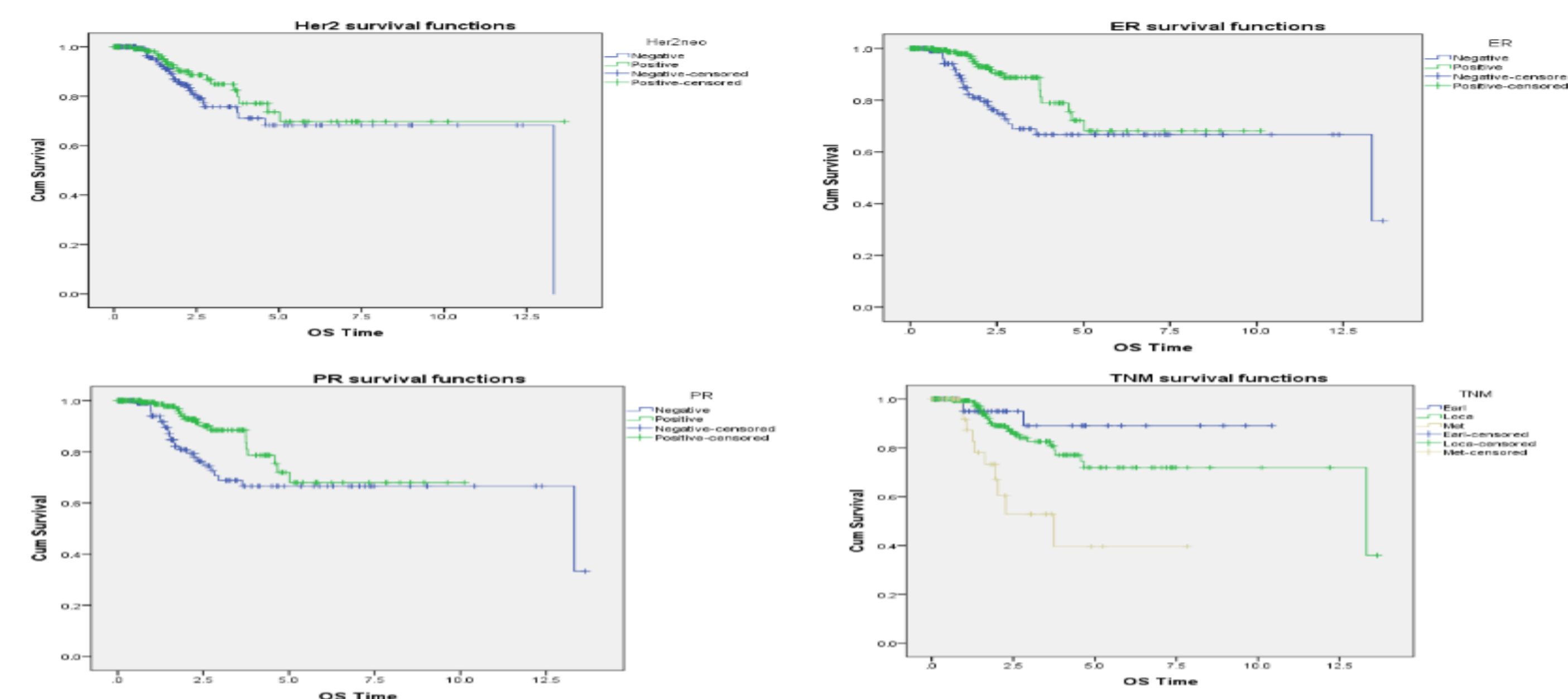
Table 1: Survival Analysis Of BC Patients <=40 years, Overall survival (OS)

Overall	5 YR OS	p-value
ER		0.024
Positive	68%	
Negative	67%	
PR		0.027
Positive	68%	
Negative	67%	
HER2		0.249
Positive	70%	
Negative	68%	
Family History of BC		0.202
Positive	86%	
Negative	70%	
Staging TNM		0.001
Early	89%	
Locally Advanced	80%	
Metastatic	40%	

Table 2: Overall survival analysis of BC patients aged 40 and below

	5 YR OS	p-value
Overall		-
ER (Estrogen receptor)		0.024
Positive	68%	
Negative	67%	
PR (Progesterone receptor)		0.027
Positive	68%	
Negative	67%	
HER2 (Human Epidermal Growth factor receptor)		0.249
Positive	70%	
Negative	68%	
Family History of BC		0.202
Positive	86%	
Negative	70%	
Staging TNM		0.001
Early	89%	
Locally Advanced	80%	
Metastatic	40%	

RESULTS CONTINUED

Picture 1: showing survival analysis

CONCLUSIONS

- The receptor status (ER, PR) and TNM staging were significant predictors of OS in Omani women diagnosed with breast cancer under or at the age of 40 years.
- The pathological characteristics of BC in Omani women could be similar to neighboring countries (like Saudi Arabia), but different from other Asian (e.g., India) and European countries (e.g., Norway).

Recommendations:

- **Improve the screening program**
- **Reduce the age at which screening is done depending on the family history and any other co-morbidities.**
- **Introduce self-examination of the breast to school and university students as part of the school and university health programs in Oman.**

Acknowledgment: