San Antonio Breast Cancer Symposium - December 9 - 12, 2025 – Poster PS2-06-16

Two cohorts of young women (<41y at diagnosis) with invasive breast cancer: Single center data on how demographics, tumor characteristics, therapies and 5-year survival differ when treated 2000-2005 and 2014-2019.

Brechje Goots[1], Annouschka Laenen[2], Sileny Han[1], Maxime Van Houdt[1], Yannick Van Herck[3], Françoise Derouane[3], Caroline Weltens[4], Hilde Janssen[4], Adinda Baten[4], Jelle Verhoeven[4], Guiseppe Floris[5], Christine Desmedt[6], Karen Van Baelen[1,6], Ann Smeets[7], Ines Nevelsteen[7], Chantal Van Ongeval[8], Machteld Keupers[8], Valerie Celis[8], Annelies Coessens[8], Renate Prevos[8], Helen De Boodt[8], Hans Wildiers[3], Patrick Neven[1]

[1]Department of Gynaecology and Obstetrics, University Hospitals Leuven, Leuven, Belgium; [2]Leuven Biostatistics and Statistical Bioinformatics Centre, KU Leuven, Leuven, Belgium; [3]Department of General Medical Oncology, University Hospitals Leuven, Leuven, Belgium; [4]Department of Radiotherapy-Oncology, University Hospitals Leuven, Leuven, Belgium; [5]Department of Pathology, University Hospitals Leuven, Leuven, Belgium; [6]Laboratory for Translational Breast Cancer Research, Department of Oncology, KU Leuven, Leuven, Belgium; [7]Department of Surgical Oncology, University Hospitals Leuven, Leuven, Belgium; [8]Department of Radiology, University Hospitals Leuven, Leuven, Belgium

BACKGROUND and AIMS

- Breast cancer tends to act more aggressive when it occurs in young women[1,2].
- Over the past two decades, breast cancer characteristics and outcomes have improved, largely due to earlier detection through increased awareness and screening, as well as improvements in (neo-)adjuvant therapies[3,4,5].
- Real-world data on breast cancer in women up to age 40 remain rare.

Primary endpoint: Comparing demographics, tumor characteristics, therapy and survival in women under 41 years with invasive breast cancer across two time periods.

PATIENTS and METHODS

Single center retrospective study in the University Hospitals of Leuven, Belgium with inclusion of patients that met following criteria:

- Female
- Age ≤40 years at diagnosis
- Diagnosed between January 2000 and December 2005 (cohort 1) or between January 2014 and December 2019 (cohort 2) with invasive breast cancer

Statistics

- Categorical variables: Fishers Exact test
- Continuous variables: Mann-Whitney U test.
- A 5% significance level was assumed for all tests.
- Analyses have been performed using SAS software (version 9.4 of the SAS System for Windows).

This study compared:

- Breastfeeding
- Alcohol consumption
- Smoking habits
- Age at diagnosis
- Age at first menarche
- Age at first partus
- Parity
- Pregnancy at diagnosis
- Detection mode
- BMI
- Genetic mutations
- Familial history
- Contraconception use
- Grade
- Histology
- Immunohistochemistry
- Molecular subtype
- Size
- Foci
- Lymph node (LN) status
- cTNM-classification
- pTN-classification
- Stage
- Treatment
- 5-year outcome

RESULTS

Cohort 1 consisted of 233 patients and cohort 2 consisted of 237 patients.

Table 1: Comparison of demographics

Variable	Statistic	Cohort 1	Cohort 2	P-value
Age at diagnosis	Mean	35.52 y	34.90 y	0.071
Age at first partus	Mean	26.79 y	27.89 y	**0.027**
Age at first menarche	Mean	12.91 y	12.88 y	0.871
Parity	Mean	1.36	1.29	0.349
Breastfeeding	n/N(%)	81/123 (65.85%)	113/146 (77.40%)	**0.041**
Pregnancy at diagnosis	n/N (%)	5/230 (2.17%)	18/237 (7.59%)	**0.009**
CC at diagnosis				
Oral CC	n/N (%)	92/219 (42.01%)	71/223 (31.84%)	**0.030**
Coil/vaginal ring	n/N (%)	29/219 (13.24%)	57/223 (25.56%)	**0.001**
Others	n/N (%)	2/219 (0.91%)	4/223 (1.79%)	0.685
No CC	n/N (%)	96/219 (43.89%)	91/223 (40.81%)	0.564
Family history				
Overall family history	n/N(%)	93/229 (40.61%)	110/232 (47.41%)	0.159
1st grade BC	n/N(%)	43/229 (18.78%)	42/232 (18.10%)	0.905
2nd grade BC	n/N(%)	63/229 (27.51%)	88/232 (37.93%)	**0.018**
1st grade OC	n/N(%)	4/229 (1.75%)	3/232 (1.29%)	0.723
2nd grade OC	n/N(%)	1/229 (0.44%)	7/232 (3.02%)	0.068
Detection mode				
Symptoms	n/N(%)	31/225 (13.78%)	23/235 (9.79%)	0.195
Examination	n/N(%)	17/225 (7.56%)	14/235 (5.96%)	0.578
Screening	n/N(%)	15/225 (6.67%)	30/235 (12.77%)	**0.029**
Self-examination	n/N(%)	162/225 (72.00%)	168/235 (71.49%)	0.918
BMI				
<18,5 kg/m²	n/N(%)	6/229 (2.62%)	11/234 (4.70%)	0.324
>30 kg/m²	n/N(%)	17/229 (7.42%)	25/234 (10.68%)	0.258
Genetic mutation	n/N(%)	36/108 (33.33%)	51/206 (24.76%)	0.113
Alcohol consumption	n/N(%)	105/218 (48.17%)	126/229 (55.02%)	0.156
Ever smoked	n/N(%)	80/227 (35.24%)	74/231 (32.03%)	0.490

Table 2: Comparison of tumor characterstics

Variable	Statistic	Cohort 1	Cohort 2	P-value
Histology				
IDC	n/N (%)	208/231 (90.04%)	228/236 (96.61%)	**0.005**
ILC	n/N (%)	18/231 (7.79%)	4/236 (1.69%)	**0.002**
Mixed ductal and luminal carcinoma	n/N (%)	5/231 (2.16%)	4/236 (1.69%)	0.749
Grade				
1	n/N (%)	10/232 (4.31%)	18/234 (7.69%)	0.125
2	n/N (%)	75/232 (32.33%)	94/234 (40.17%)	0.078
3	n/N (%)	147/232 (63.36%)	122/234 (52.14%)	**0.014**
Molecular subtype				
Luminal A like	n/N (%)	71/227 (31.28%)	76/237 (32.07%)	0.921
Luminal B like	n/N(%)	53/227 (23.35%)	47/237 (19.83%)	0.368
ER+/HER2+	n/N(%)	26/227 (11.45%)	48/237 (20.25%)	**0.011**
ER-/HER2+	n/N(%)	26/227 (11.45%)	14/237 (5.91%)	**0.046**
TNBC	n/N(%)	51/227 (22.47%)	52/237 (21.94%)	0.911
Foci				**<.001**
Multifocal	n/N(%)	32/228 (14.04%)	70/223 (31.39%)	
Unifocal	n/N(%)	196/228 (85.96%)	153/223 (68.81%)	
Mean	Mean	1.21	1.80	**<.001**
Size	Mean	30.71 mm	20.45 mm	**<.001**
LN status (positive)	n/N(%)	81/223 (36.32%)	96/237 (40.51%)	0.357

Table 3: Comparison of treatment

Variable	Statistic	Cohort 1	Cohort 2	P-value
Course of treatment				
Primary surgery	n/N (%)	192/233 (82.40%)	120/237 (50.63%)	**<.001**
Neoadjuvant	n/N (%)	36/233 (15.45%)	103/237 (43.46%)	**<.001**
Metastatic	n/N (%)	5/233 (2.15%)	14/237 (5.91%)	**0.038**
Treatment				
Radiotherapy	n/N (%)	203/233 (87.12%)	194/237 (81.86%)	0.127
Chemotherapy	n/N (%)	189/233 (81.12%)	193/237 (81.43%)	0.185
Endocrine therapy	n/N (%)	136/233 (58.37%)	153/237 (64.56%)	1.000
Anti-HER2 therapy	n/N(%)	12/233 (5.15%)	57/237 (24.05%)	**<.001**

Table 4: Comparison of 5-year outcome

Variable	Statistic	Cohort 1	Cohort 2	P-value
5-year outcome				
Remission	n/N (%)	176/232 (75.86%)	196/226 (86.73%)	**0.004**
Relapse	n/N (%)	15/232 (6.47%)	8/226 (3.54%)	0.199
Metastasis	n/N (%)	51/232 (21.98%)	27/226 (11.95%)	**0.006**
At diagnosis	n/N(%)	5/232 (2.16%)	14/226 (6.19%)	
After diagnosis	n/N (%)	46/232 (19.83%)	13/226 (5.75%)	
Death (all causes)	n/N (%)	32/232 (13.79%)	15/226 (6.64%)	**0.013**
BC-specific death	n/N (%)	32/232 (13.79%)	14/226 (6.19%)	**0.008**

CONCLUSIONS

Our study found, across two time periods, differences in demographics, detection mode, tumor characteristics, systemic treatment and substantial disparities with an improved outcome in women under 41 years more recently diagnosed with invasive breast cancer.

REFERENCES and ABBREVATIONS

References: 1. Gnerlich et al, J Am Coll Surg, 2009; 2. Bharat et al, J Surg Oncol, 2009; 3. Smith et al, J Clin Oncol, 2011; 4. Park et al, J Clin Oncol, 2015; 5. Sanvisens et al, Breast Cancer Res Treat, 2025 | | **Abbrevations**: BC: Breast Cancer, BMI: Body Mass Index, CC: contraconception, cTNM: clinical Tumor-Node-Metastasis classification, ER: Estrogen Receptor, IDC: Invasive Ductal Carcinoma, ILC: Invasive Lobular Carcinoma, HER2: Human Epidermal Growth Factor Receptor 2, Luminal A like breast cancer: ER+/HER2-, grade 1 or 2 breast cancer, Luminal B like breast cancer: ER+/HER2-, grade 3 breast cancer, LN: lymph node, OC: Ovarium Cancer, pTN: pathological Tumor-Node classification, TNBC: Triple Negative Breast Cancer

ACKNOWLEDGEMENTS

We would sincerely like to thank the patients for their participation and contribution. All authors have no conflicts of interest to declare.

RESEARCH POSTER PRESENTATION DESIGN © 2015
www.PosterPresentations.com

This presentation is the intellectual property of the author/presenter. Contact them at patrick.neven@uzleuven.be for permission to reprint and/or distribute.