

Table 1. Patient, tumor, and treatment characteristics.

	Whole cohort N=22,274	SLNB before NAC N=3,816	cN0 group N=6,580	cN+ group N=11,878	Chi ² p-values
Age (years), No. (%)					
<40	3,237 (14.5)	646 (16.9)	1,019 (15.6)	1,572 (13.2)	<0.001
40-59	13,948 (62.6)	2,493 (65.3)	4,110 (62.5)	7,345 (61.8)	
≥60	5,089 (22.9)	677 (17.7)	1,451 (22.1)	2,961 (24.9)	
Morphological subtype, No. (%)					
Ductal	19,305 (86.7)	3,250 (85.2)	5,558 (84.5)	10,497 (88.4)	<0.001
Lobular	2,122 (9.5)	399 (10.5)	761 (11.6)	962 (8.1)	
Mixed	517 (2.3)	103 (2.7)	154 (2.3)	260 (2.2)	
Other	330 (1.5)	64 (1.7)	107 (1.6)	159 (1.3)	
Molecular subtype, No. (%)					
HR+, HER2-	10,886 (49.6)	2,020 (53.4)	2,868 (44.1)	5,998 (51.4)	<0.001
HR+, HER2+	3,842 (17.5)	567 (15.0)	1,295 (19.9)	1,980 (17.0)	
HR-, HER2+	2,303 (10.5)	276 (7.3)	554 (8.5)	1,473 (12.6)	
Triple negative	4,932 (22.5)	920 (24.3)	1,787 (27.5)	2,225 (19.1)	
HR missing*	311	33	76	202	
Grade, No. (%)					
1	1,343 (9.0)	282 (13.1)	435 (8.5)	626 (8.2)	0.002
2	7,179 (48.0)	988 (45.9)	2,379 (46.4)	3,812 (49.6)	
3	6,441 (43.0)	884 (41.0)	2,311 (45.1)	3,246 (42.2)	
Unknown*	7,311	1,662	1,455	4,194	
cT-status, No. (%)					
cTX [§]	166 (0.8)	12 (0.3)	28 (0.4)	126 (1.1)	<0.001
cTis [@]	19 (0.1)	2 (0.1)	2 (0.03)	15 (0.1)	
cT1	3,622 (16.3)	574 (15.0)	1,352 (20.6)	1,696 (14.3)	
cT2	11,966 (53.7)	2,509 (65.0)	3,819 (58.0)	5,638 (47.5)	
cT3	4,417 (19.8)	623 (16.3)	1,026 (15.6)	2,768 (23.3)	
cT4	2,084 (9.4)	96 (2.5)	353 (5.4)	1,635 (13.8)	
Breast surgery, No. (%)					
BCS	10,389 (46.6)	2,095 (54.9)	3,569 (54.2)	4,725 (39.8)	<0.001
Mastectomy	11,885 (53.4)	1,721 (45.1)	3,011 (45.8)	7,153 (60.2)	
ypT-status, No. (%)					
ypTis	876 (4.1)	137 (3.7)	267 (4.2)	472 (4.2)	<0.001
ypT0	5,812 (27.1)	942 (25.3)	1,911 (30.0)	2,959 (26.0)	
ypT1	8,450 (39.4)	1,627 (43.7)	2,559 (40.1)	4,264 (37.5)	
ypT2	4,558 (21.2)	833 (22.4)	1,231 (19.3)	2,494 (21.9)	
ypT3	1,440 (6.7)	172 (4.6)	343 (5.3)	925 (8.1)	
ypT4	337 (1.6)	12 (0.3)	69 (0.01)	256 (2.3)	
Unknown*	801	93	200	508	
ALND, No. (%)					
No	12,475 (56.0)	3,070 (80.5)	5,613 (85.3)	3,792 (31.9)	<0.001
Yes [#]	9,799 (44.0)	746 (19.5)	967 (14.7)	8,086 (68.1)	
ypN-status, No. (%)					
ypN0	9,936 (44.6)	253 (6.6)	5,337 (81.1)	4,346 (36.6)	<0.001
ypN+	9,268 (41.6)	493 (12.9)	1,243 (18.9)	7,532 (63.4)	
ypNX [†]	3,070 (13.8)	3,070 (80.5)	NA	NA	
Targeted therapy, No. (%)					
No	15,922 (71.5)	2,947 (77.2)	4,637 (70.5)	8,338 (70.2)	0.696
Yes	6,352 (28.5)	869 (22.8)	1,943 (29.5)	3,540 (29.8)	
Hormonal therapy, No. (%)					
No	8,172 (36.7)	1,339 (35.1)	2,654 (40.3)	4,179 (35.2)	<0.001
Yes	14,102 (63.3)	2,477 (64.9)	3,926 (59.7)	7,699 (64.8)	
Radiotherapy, No. (%)					
No	3,635 (16.3)	933 (24.5)	1,655 (25.2)	1,047 (8.8)	<0.001
Yes	18,639 (83.7)	2,883 (75.6)	4,925 (74.9)	10,831 (91.2)	

ALND, axillary lymph node dissection; BCS, breast-conserving surgery; cN0, node-negative before NAC; cN+, node-positive before NAC; HER2, human epidermal growth factor 2; HR, hormone receptor; N, number of patients; NA, not applicable; NAC, neoadjuvant chemotherapy; SLNB, sentinel lymph node biopsy; ypN0, absence of nodal disease; ypN+, presence of nodal disease.

[§] Primary tumor size could not be assessed, or no evidence of primary tumor (i.e., occult breast cancer).

[#] Of whom 132 patients did not undergo formal ALND: six, 15, and 111 patients, in respectively the SLNB before NAC, cN0 and cN+ group.

[†] Patients who underwent SLNB before NAC, and no axillary surgery after NAC.

* Missing values were excluded from the Chi²-test.

Chi²-test was performed to compare the cN0 and cN+ group. p-value of <0.05 was considered statistically significant.