

Supplementary File

Table 1. Patient clinical features and treatment

	ExR patient	ExNR patient
Clinical features		
Age at diagnosis	56	31
Breast tumor size (mm)	50	35
TNM stage	T3 N2 M0	T2 N0 M0
Neoadjuvant treatment		
Chemotherapy	4 x FEC + 2 x docetaxel	4 x FEC + 4 x docetaxel
APBI	20 Gy (2 Gy BID x 5 days)	25 Gy (2.5 Gy BID x 5 days)
Breast surgery type	Lumpectomy	Mastectomy
ALND	Yes	Yes
Pathological response	Near-pcr	Ypt2, ypn0
Toxicities	Grade 2 hematologic, GI, vascular, neurologic	No
Adjuvant treatment		
Chemotherapy	No	No
RT	WBI + ILN	Chest wall + ILN
Recurrence		
Local	No	No
Metastatic	No	Yes
Site(s) of metastases	Na	Lung, pleura, mediastinum
Treatment of metastases	Na	7 lines of systemic ct
Disease-free survival	60 months	12 months
Overall survival	60 months	36 months

ALND — axillary lymph node dissection; APBI, accelerated partial breast irradiation; BID — bis in die, twice a day (two fractions of radiotherapy with an interval of 6 hours per day); CT — chemotherapy; ExR — exceptionally good response; ExNR — exceptionally poor response; FEC — 5-fluorouracil-epirubicin-cyclophosphamide regimen; GI — gastrointestinal; ILN — internal lymph nodes (including supraclavicular and internal mammary lymph nodes); pCR — pathologic complete response; RT — radiation therapy; WBI — whole breast irradiation

Table 2. Histological and immunohistochemical characteristics of pre-NAT and post-NAT breast tumors and axillary lymph nodes

	ER patient	ENR patient
Pre-NAT features		
histological type	IBC-NS	IBC-NS
histological grade (Elston-Ellis SBR)	Intermediate	High
presence of LVI	No	No
axillary LNs	2 biopsied, both involved	Not biopsied
ER	0 %	0 %
PR	0 %	0 %
HER2 score	1	0
<i>ERBB2</i> amplification status	Non-amplified	Non-amplified
Ki67	80%	95 %
molecular subtype	Triple negative	Triple negative
E-CADH	100%, strong	100%, moderate
CK5/6	50%, multifocal	< 1%
CK14	0%	0%
CK8/18	0%	30%, multifocal
KIT (CD117)	30%, multifocal	80%
EGFR	< 1%	0%
p53	100%, strong	Absent
pRb	100%	0%
Post-NAT features		
Breast		
Tumor bed size	60 mm	45 mm
Residual tumor size	9 mm	45 mm
Residual tumor histotype	NA	IBC-NS with a metaplastic/sarcomatous component
Residual tumor grade	Intermediate	High
LVI	No	No
TILs	NA	< 1%
Axillary LNs		
Excised (n)	13	5

Involved (n)	0	0
Altered (n)	9	0
IHC profile of residual tumor		
ER	0%	0%
PR	0%	0%
HER2 score	0	Heterogeneous, areas with score 0, 1 and 2
<i>ERBB2</i> amplification status	ND	Non-amplified
Ki67	10%	90%
molecular subtype	Triple negative	Triple negative
E-CADH	100%	100% in the ribbon and solid pattern areas, 0% in the loose cell and sarcomatous areas
CK5/6	100 %	Heterogeneous, 1–90%
CK14	ND	0%
CK8/18	ND	50%, multifocal
KIT (CD117)	ND	70%, multifocal
EGFR	ND	0%
p53	100%, strong	0%
pRb	100%	0%
SOX2	ND	10%, small foci
SOX10	ND	80%
ZEB1	ND	50% in average (100% in the loose cell and sarcomatous areas)
Chromogranin	ND	0%
Synaptophysin	ND	0%
CD56	ND	30%, multifocal
BCL-2	ND	0%
AR	ND	0%
PD-L1	ND	< 1%

AR — androgen receptor; CK — cytokeratin; E-CADH — E-cadherin; Elston-Ellis SBR — the Elston & Ellis modified Scarff-Bloom-Richardson grading system; ER — estrogen receptor; IBC-NS — invasive breast carcinoma of nonspecific type; LNs — lymph nodes; LVI —

lymphovascular invasion; NA — not applicable; NAT — neoadjuvant treatment; PR — progesterone receptor; pRb — retinoblastoma protein