1.20 39

1 1

2 1 3 1

2.40 69

1

2 1 2 1 X /

3

lobular carcinoma in situ

LCIS 3.

- [a b]

1 BRCA1/BRCA2

2 1 [c]

45 50 1

[d] 50 / 1

/ /

2 [e]

50 2

/

3

4

5

2 1 50 /

/ /

a. 1 -

Ę €Ð¢,

/

-

-

b.

2 45

40

BRCA1/2

c. d.

e.2

2

3.

4.

5.

X

MRI

1. X

1

40

X

1

X

2

3 1

4.

National Comprehensive

Cancer Network NCCN European

Society for Medical OncQ لا

2 PET-CT

PET-CT 15

5.

1 B

PET-CT

2B

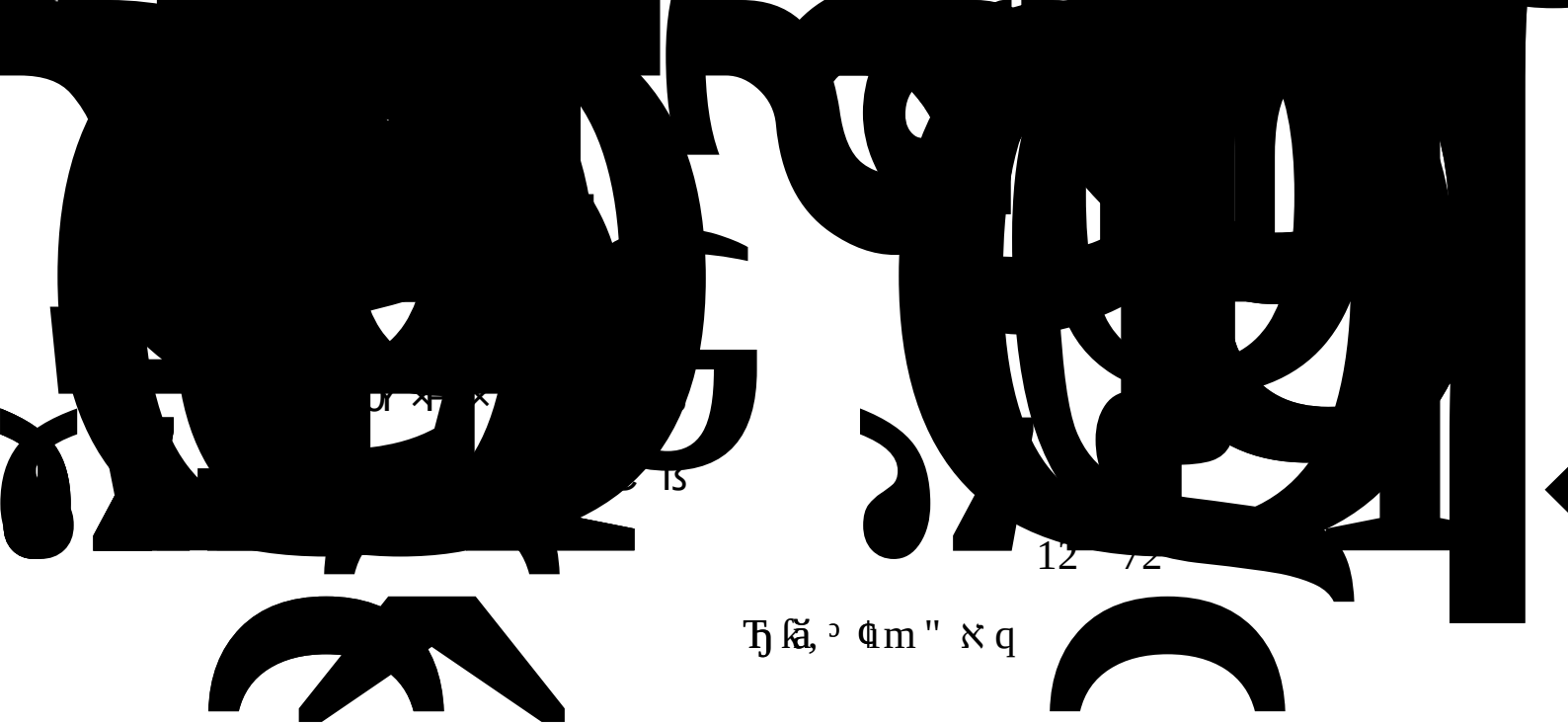
2.

CA15-3

CA15-3

1.

2.



4 3 5mm

1

5

5 mm

2

5cm 1cm 1

DCIS

5cm DCIS

20

5.

1

3

15

2

1

1 isolated tumor cells ITC

≤0.2mm

200 AJCC pN0 i+

ITC

2 0.2mm 2mm

AJCC pN1mi ITC

pN0 pN1

2mm

3 2mm

2

1 2mm

HE

2 2mm

3

2mm

150 200 m 6

1.

2 2012 2019 WHO

NCCN

NCCN

/

1

2

3

2 DCIS DCIS

DCIS

DCIS DCIS

-

DCIS

DCIS

DCIS

3.

4

8 AJCC

1

1

1

2

2

3

2

4

2

5

DCIS

1 3 10

pN

yT

yN

ER PR

estrogen

receptor ER progesterone receptor

10%

3+ / HER2 HER2

>6 HER2/CEP17 >2.0 ER PR

ER PR 5 HER2

HER2 6

Ki-67

1

/

1.

1 LCIS LCIS

LCIS

LCIS

DCIS

atypical lobular hyperplasia ALH LCIS

ALH LCIS 5% 32%

8% LCIS

LCIS LCIS

LCIS

LCIS IDC

LCIS

X

MRI

X X

LCIS

LCIS

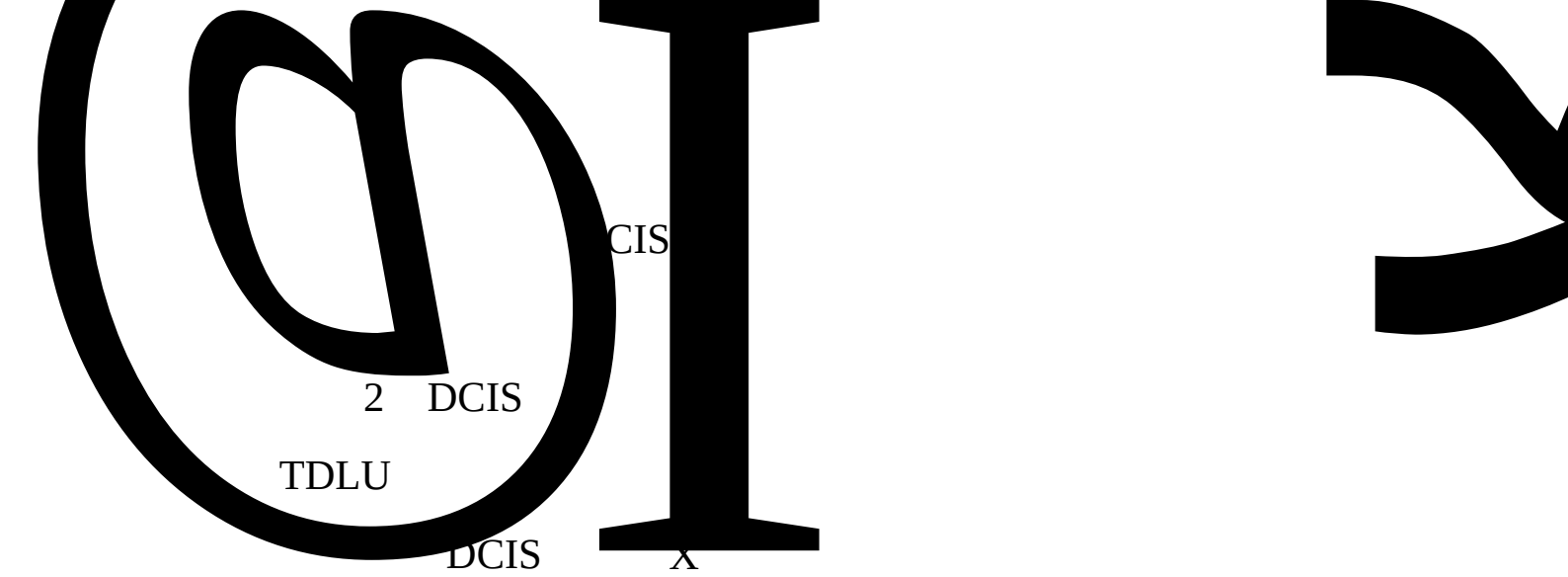
DCIS LCIS

LCIS

DCIS E- P120

LCIS

5



CIS

2 DCIS

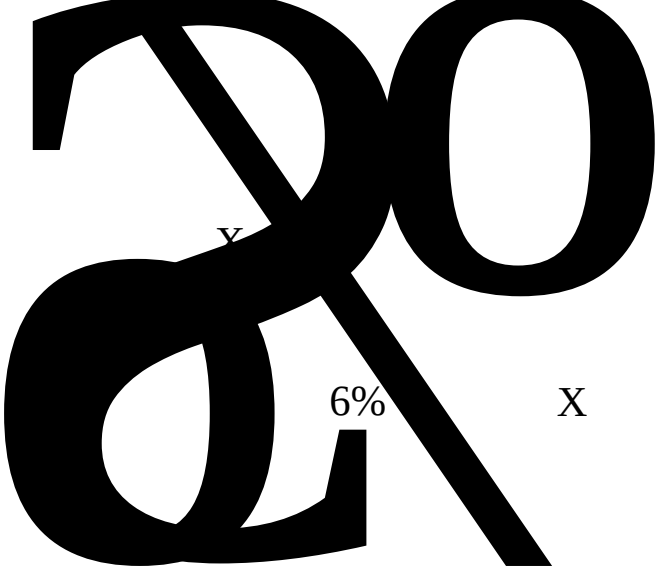
TDLU

DCIS X



DCIS 3

DCIS



X

10%

6% X DCIS MRI

DCIS

DCIS DCIS

DCIS

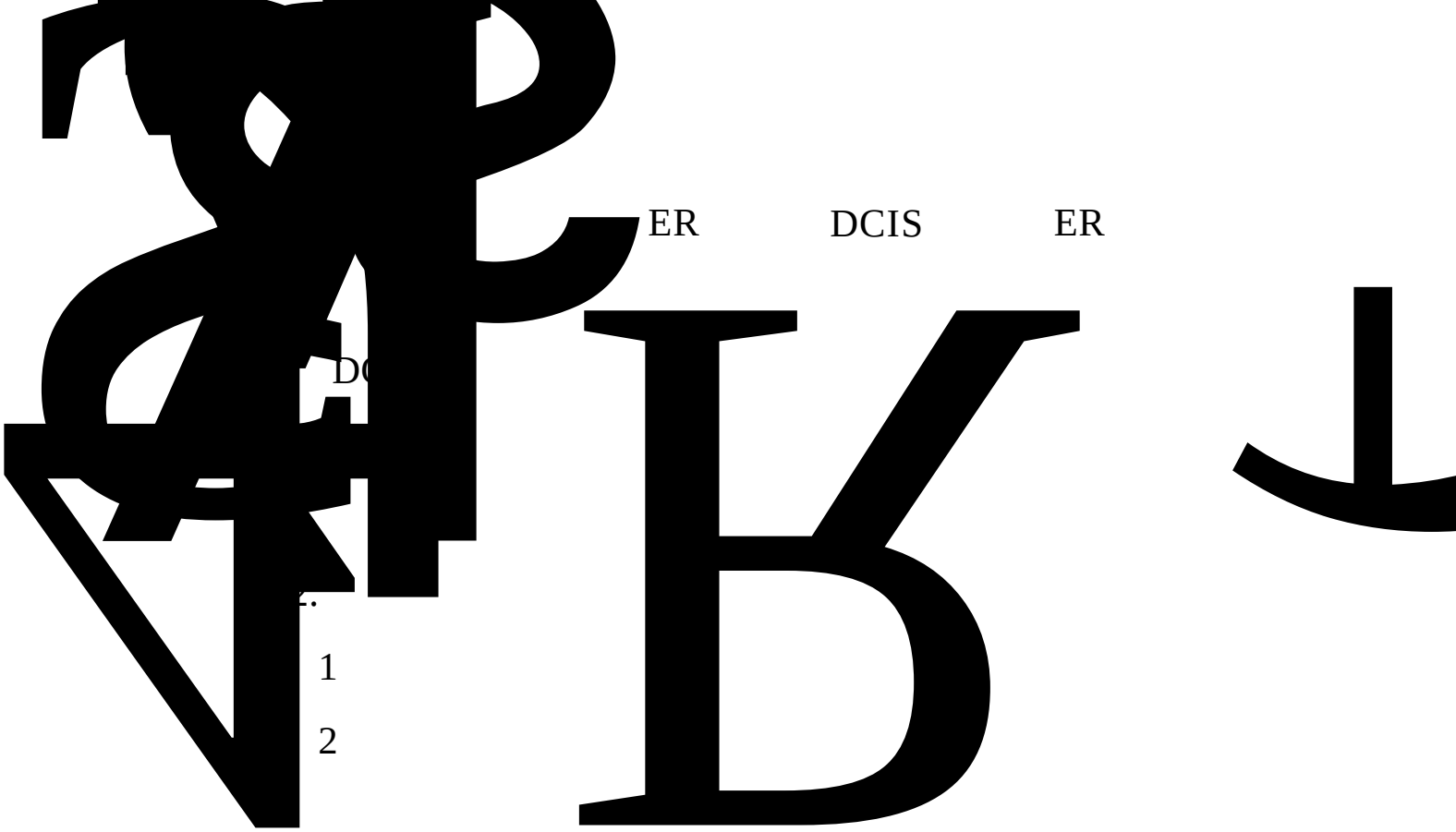
25% IDC LCIS

17%~27% DCIS

DCIS

1

2 SLNB


ER
DCIS
ER
DC
1
2

Halsted

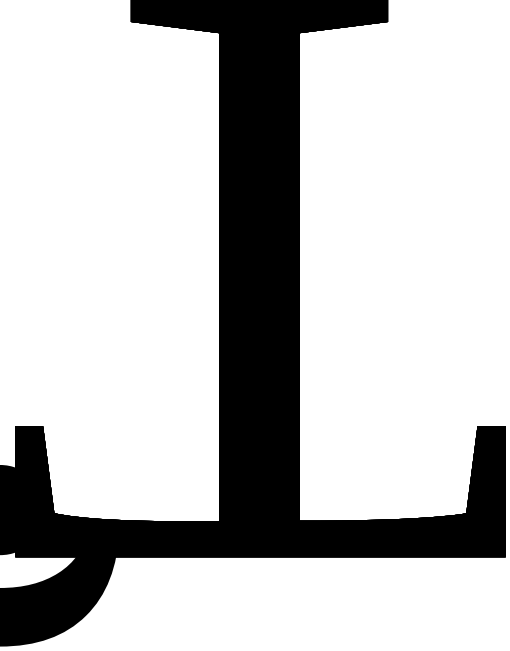
/

+

2

7

35



T4

2

/

ACOSOG Z0011

T3 2

SLNB SLNB T4

SLNB SLNB

Level

Level 10

Level

Level

4.

+ ⊥ $



ì G$1ÿÑ• É

1

4

5

1.

1

>70 ≤2cm

ER

2

1

1. 5

2 SLNB

3

T 1　2　　1~2

2cm　　intensity-modulated radiotherapy　IMRT

3

CT CT

CT

X

4

50Gy/2Gy/25f

10 16Gy/2Gy/5 8f

60Gy/2.4Gy/25f

40Gy/15f 42.5Gy/16f

43.5Gy/15f/3w

10 16Gy/2Gy/5 8f

10 12.5Gy/4 5f

8.7Gy/3f

49.5Gy/62.5Gy2

6 5

38.5Gy/10f 2 5 RAPID

38.5Gy/10f 1 40Gy/10f 1

2.

1

>5cm

≥4

T1 2

1 3

≥50

1

1.

2

1

2

4

<35

3

SLNB

3

CT

CT

40% 60%

90% 90%

4

50Gy/2Gy/25f

40 43.5Gy/15f/3w

5

8

left

ventricular ejection fraction LVEF 50%

3.

1

1

+

cN 1

ypN 0

pCR >40

3

2

cN 1

40 ypT>2 cm

HER2

Locally Advanced Breast Cancer, LABC

LABC 50 Gy 25

10~16 Gy

10Gy 5

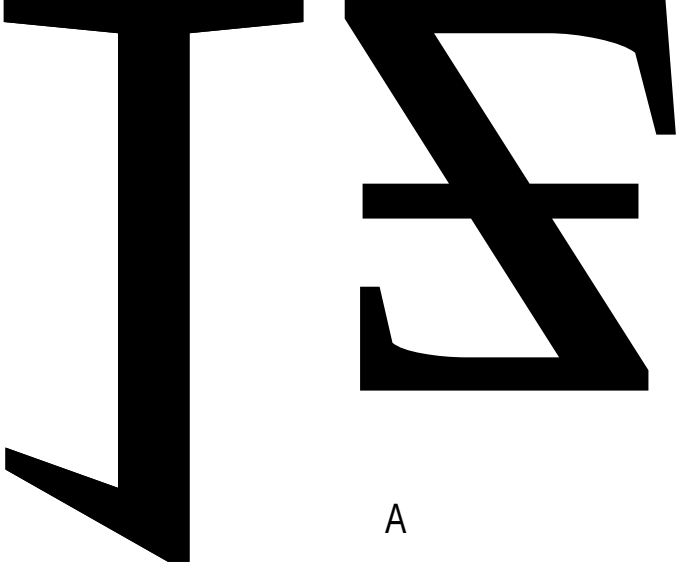
16~20Gy 8~10

CT

2

D_T

45 50 Gy/25f/5w D_T 60 66Gy/30 33f/6 6.5w



35 >2cm

A

HER2 ER/PR

2

3.5 10^9/L 80 10^9/L

3

10

1 AC

/ EC /

THP

THP 40~50 mg/m^2

TAC T

AC 1

AC 3 1 AC

2 1

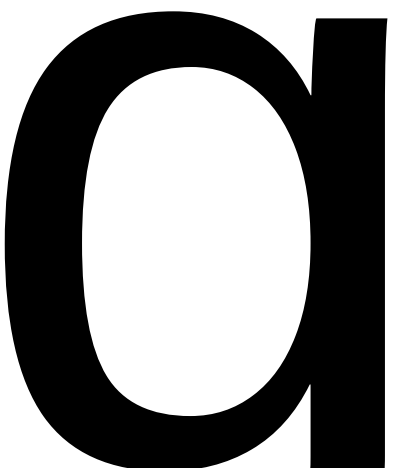
2 HER2

HER2

4

4 8

70



1

A T3 N1 M0 B C

A B A T3 N1 M0

2

ER PR HER2 Ki-67

1.5 10^9/L 75 10^9/L

3

HR /HER2

HER2

/

HER2

pCR HR

pCR

DFS

5 pCR

6 8 HER2

T-DM1

1

pCR 1

HR

3.

X CT

CT MRI CT MRI

PET-= تن

12

sacituzumab govitecan

FDA

HER2

HER2

3 4 6

1.

1

1 ER / PR

ASCO/CAP

ER 1% 100% ER

ER 1% 10% ER ER

ER

2 5

DCIS DCIS

2

3

Ki-67

2018

1

d

5

6 l 12 1 8 ¢

D

2

ER

3

CDK4/6 HDAC

3

1 CDK4/6

4

1 CDK4/6

CDK4/6 HR /HER2

/

OFS OFS CDK4/6

CDK4/6

CDK4/6

2

AI ER

OFS OFS AI OFS

ER ER

3

2 3 1

HER2

T-DM1

1. HER2

1 HER2 3+ FISH

CISH

2 HER2 2+ FISH

CISH HER2

1 HER2

2 6mg/kg 8mg/kg 3

2mg/kg 4mg/kg

3 4

5. HER

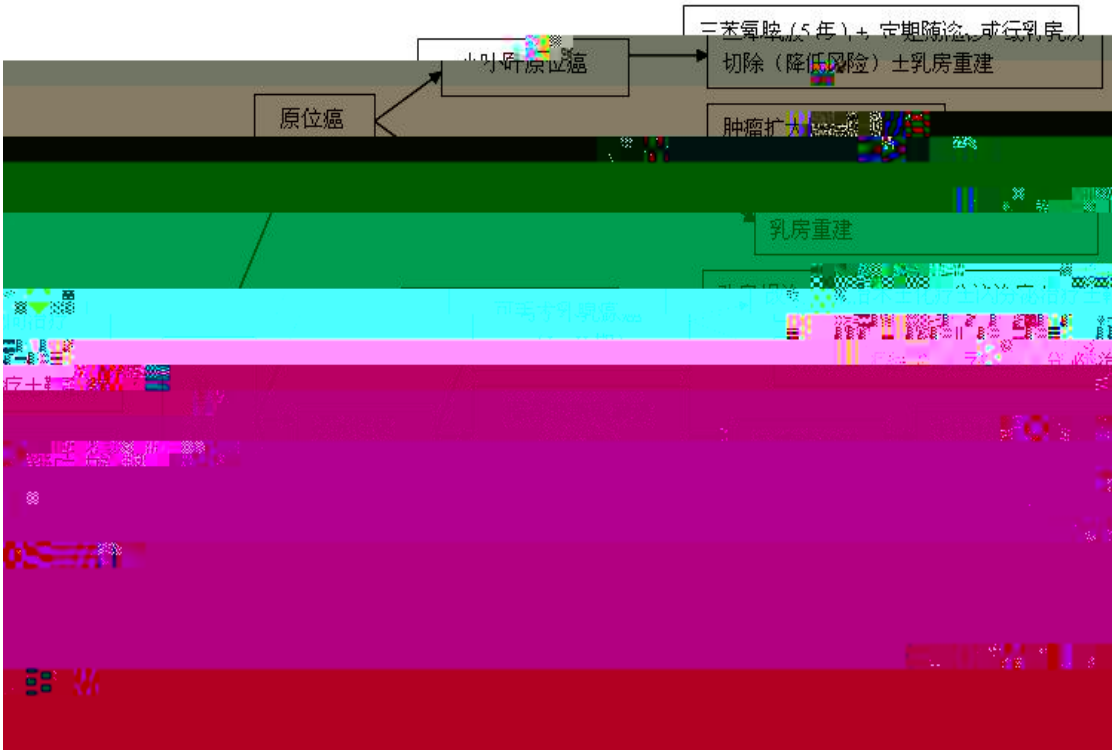
HER2

HER2

“ ”“

”

“ ”“ ”



2 4 6 1 3

6 1 5 1

6 1

X 1

X CT 1

6 1 3 1

4

1 5 2

1

6

1 3 1

1

1.

2.

3.

4. pTNM AJCC 8

5.

6. HER2/neu FISH

7.

8.

9.

10.

11.

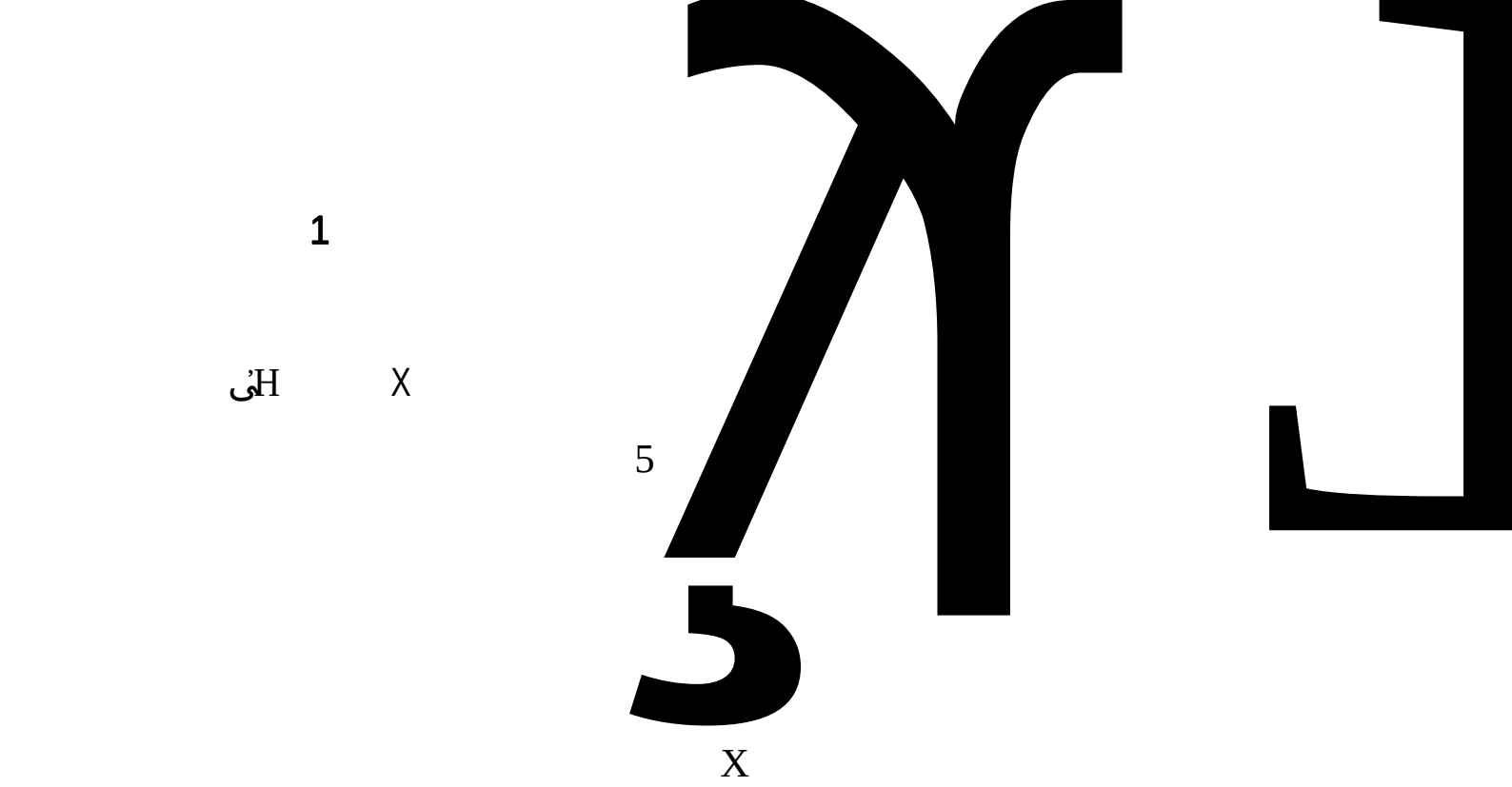
12.

13.

14. HER2

15. 2022

1



ىH X

5

X

40

D

1.

2.

3. 3 1/3

1/3 1/3

4.

X

1.

2.

1

BI-RADS 4B BI-RADS

4B BI-RADS 4B

BI-RADS 4C

2

3.

4.

5.

6.

BI-RADS

1.

BI-RADS 0

2.

BI-RADS 1 X

0

BI-RADS 2

0

BI-RADS 3 0 2%

1 6

X

6 12 24 X

2~3 3 2

2 1

BI-RADS 4

2%~95%

4A 4B 4C

BI-RADS 4A 2%~10%

6

BI-RADS 4B 10%~50%

BI-RADS 4C 50%~95%

BI-RADS 5 95%

BI-RADS 6

BI-RADS 6

BI-RAD 3 2

BI-RADS 4 5

1.

2.

3.

4. 1 2

2

3

4

5. X MRI

6.

NCCN BI-RADS Breast imaging reporting and data system

1.

0

2.

1

1 1

2

6 1 1

3

MRI

6

1

MRI

2

X

3.

MRI 2

MRI

1. T1

T2 T1

2.

0.1 0.2mmol/

2 3 ml/s 10

15 ml

T1

5 9 8 10 3.

2 3 2 b 0 50s/mm^2

800 s/mm^2 1000 s/mm^2

3mm <1.5mm

2

- TIC



D

2.

¢

MRI

2

BI-RADS 1 0

BI-RADS 2 0

BI-RADS 3 2%

3

6

BI-RADS 4

2%-95%

X

4A 4B 4C

BI-RADS 5 95%

BI-RADS 6

2

1
2
-

ADH/DCIS
DCIS
/

3

3

Scarff-Bloom-Richardson

1

>75% 2

10% 75% 3

<10%

1

ئ

10HPF

	0	5	0	9	0	11	1
	6	11	10	19	12	22	2
		11		19		22	3

3 5 6 7

8 9

4

pTNM

pT

___ pTX

___ pT0 #

___ pTis #

___ pTis

/ /

#

___ pT1 ≤20 mm 5mm 10mm

T1a T1b T1c

___ pT1mi ≤1mm

pT1a 1mm ≤5mm 1.0-1.9mm

2mm

pT1b 5mm ≤10mm

pT1c 10mm ≤20mm

___ pT2 20mm ≤50 mm

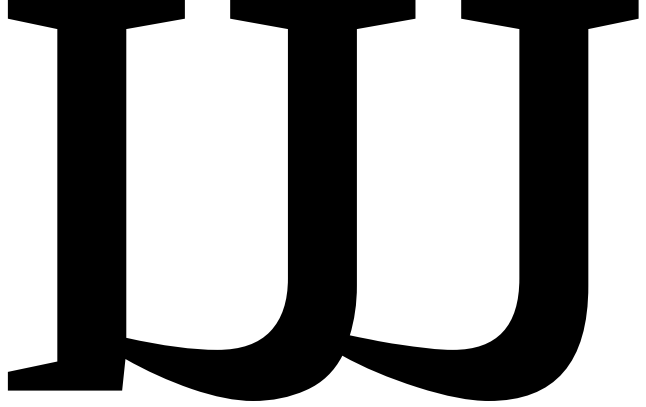
___ pT3 50 mm

___ pT4 /

T4

___ pT4a

T4b



pN

___ pNX

___ pN0 ITCs

___ pN0 i-

___ pN0 i+ ITCs ≤0.2mm

ITC ≤0.2mm ITCs

200

pN0 mol- RT-PCR

___ pN0 mol+ ITCs RT-PCR

___ pN1mi 200 0.2 mm ≤2.0 mm

___ pN1a 1 3 1 2.0

mm

___ pN1b

0.2 mmŎ

___ pN1c N1a

___ pN3a ≥10 1

2.0mm

___ pN3b pN1a pN2a cN2b

pN2a pN1b

___ pN3c

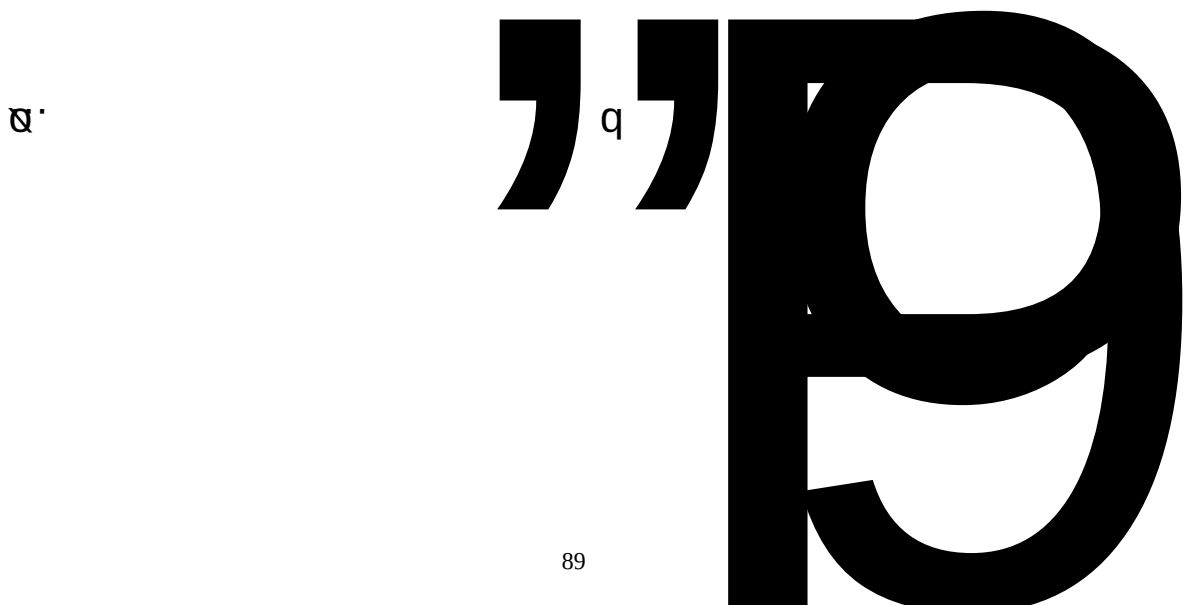
T1 T1mi N1mi

Nx sn

M

___

___ cM0 i+



	T2			N0		M0
B	T2			N1		M0
	T3			N0		M0
A	T0	T1	T2	N2		M0
	T3			N1	N2	M0
B	T4			N0	N1	N2 M0
C		T		N3		M0
		T		N		M1

5

_____

_____

25cm 16cm 5.4cm

12.5 cm 4cm

3.5cm 3.4 cm 2.5 cm 1.2cm

0.5cm

0.2

1.8cm

1

3+3+2=8

5%

6

R2/ F H

FISH

+(ϩ

ϱ 1 (ϭ ϭ ϭ ϭ ϱ

ꓘIƧH

HE 2+

FISH

HEŇ2

HER2 / 4.0 <6.0 <2.0

HER2 / 4.0 2.0 HER2 / 6.0 <2.0

HER2 □ □ %

HER2 □ □

1. FISH

2. HER2/CEP17

7

-
-
-

8

		6 pT 2cm 1 [a] [b] ER / PR HER2 [c] 35
		6 1 pT >2cm 2 3 ER PR HER2 <35
	1 3	HER2 ER / PR
	1 3	HER2 ER PR
	4	

9

LuminalA	ER Ki-67 PR PR >20% [a] 20% 30% HER2 Ki-67 Ki-67 <14%
Luminal B	B HER2 ER / PR HER2 Ki-67 ≥14% PR ≤20% B HER2 ER / PR HER2
HER2	Ki-67 HER2

	ER PR HER2	Basal-like 80%

10

TAC

75 mg

100 mg m^2 iv 1 3 1 12

TC

75 mg m^2 iv 1

600 mg m^2 iv 1

21 1 4

AC

60 mg m^2 iv 1

600 mg m^2 iv 1

21 1 4

FAC

500 mg m^2 iv 1 8

50 mg m^2 iv 1

500 mg m^2 iv 1

21 1 6

EC

90~100 mg m^2 iv 1

600~830 mg m^2iv 1

21 1 8

FEC → T

500 mg m^2 iv l

100 mg m^2 iv 1

500 mg m^2 iv 1

21 1 3

100 mg m2 iv 1

21 1 3

FEC → P

600 mg m^2 iv 1

90 mg m^2 iv 1

600 mg m^2 iv 1

21 1 4

100 mg m^2 iv 1

11

80mg/m^2 1 8 15 28

175mg/m^2 1 21

1000-1250mg/m^2 2 1-14

21

800-1200mg/m^2 1 8 15 28

25mg/m2 60mg/m2 1 8 15

28

50mg/m^2 1 28

60-100mg/m^2 1 21

100 mg/m2 125mg/m^2

1 8 15

28

260mg/m^2 1 21

AUC 5 6 1 21-28

75mg/m^2 1 21

60-90mg/m^2 1 21

60mg/m^2 1 21

20mg/m^2 1

50 100mg 1 1-21 28

75-100mg 1-10 21

TX

75mg/m^2 1

950 1000mg/m^2 2 1-14 21

GT

1000-1250mg/m^2 1 8

175mg/m^2 1

75mg/m^2 1

21

GC

1000mg/m^2 1 8

AUC 2 1 8

21

ET

60-75mg/m^2 1

75mg/m^2 2

21

CAF

500mg/m^2 1

50mg/m^2 1

5- 500mg/m^2 1 8

21

FEC

5- 500mg/m^2 1 8

50mg/m^2 1 8

400mg/m^2 1 8

28

AC

60mg/m^2 1

600mg/m^2 1

21

EC

75mg/m^2 1

600mg/m^2 1

21

CMF

100mg/m^2 1-14

40mg/m^2 1 8

5- 600mg/m^2 1 8

28

12

≥60

60

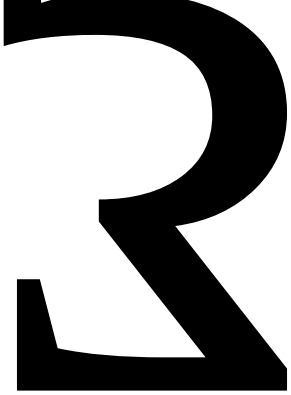
1 FSH

60 FSH

LH-RH

FSH/

13



AC→PH P

60 mg m^2 iv 1

600 mg m^2 iv 1

21 1 4

80mg m2 iv 1 12



2mg/kg iv 1

6mg/kg iv 3 1

G-CSF

840mg iv 420mg iv 1 3

1

TCH P

mg m^2 iv

AUC=6 iv 1

iv

4mg/kg iv

2mg/kg iv 8mg/kg iv

6mg/kg iv 3 1

840mg iv 1 420mg iv 1 3

1

AC → TH P

60 mg

D

2mg/kg iv 11 6mg/kg iv 3

1

0mg iv 420mg iv 1

3 1

TC4H

75 mg m^2 iv 1

600 mg m^2 iv 1

21 1 4

4mg/kg iv 1

2mg/kg iv 11 6mg/kg iv 3

1

PH

80mg m^2 iv 1 12

4mg/kg iv 1

2mg/kg iv

14

HER2

1 HER2

+

75~100mg/m^2 iv 1

8mg/kg ~6mg/kg iv 1

21 1

+ +

75mg/m^2 iv 1

1000mg/m^2 PO 2 1~14

8mg/kg ~6mg/kg iv 1

21 1

+

80mg/m^2 iv 1

175mg/m^2 iv 1 3 1

4mg/kg ~2mg/kg iv 1

8mg/kg ~6mg/kg iv 1 3 1

+ +

80mg/m^2 iv 1 8 15

AUC=2 iv 1 8 15

4mg/kg ~2mg/kg iv 1

28 1

+

25mg/m^2 iv 1 8 15

4mg/kg ~2mg/kg iv 1

28 1

+ +

75~100mg/m^2 iv 1

8mg/kg 6mg/kg iv 1

840mg iv 420mg iv 1

21 1

2)

+

1250mg PO 1 1~21

1000mg/m^2 PO 2 1~14

21 1

+

1000mg PO 1

4mg/kg 2mg/kg iv 1

8mg/kg 6mg/kg iv 1 3

1

15

2022