



MedStar Health

Knowledge and Compassion  
**Focused on You**

# Breast cancer staging update

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- Review of the AJCC 8<sup>th</sup> edition breast cancer staging
- Review of genomic assays as stage modifiers
- Case presentation

# Breast cancer facts

- Breast cancer is the most common cancer in women
- Breast cancer is the second most common cause of cancer death in women
- 252,000 new cases of invasive breast cancer and 40,000 breast cancer deaths in 2017
- 60,000 new cases of DCIS
- 1 in 8 women in the US will develop breast cancer

# Breast cancer staging system

- The TNM system has been around since 1959
- T = tumor
- N = nodes
- M = metastases
- Clinical and pathologic stage

# Breast cancer staging system

- This is an anatomic stage
- A patient with a 1.5cm breast cancer and one positive sentinel node, will be staged as T1cN1a, Stage IIA regardless of the biology of the cancer
- BUT...all breast cancers are not created equal

# Breast cancer subtypes

- Breast cancer is a very heterogeneous disease
- Subtypes have been identified:
  - Luminal A (ER/PR +, Her2 neu -, grade I-II)
  - Luminal B (ER/PR +, but lower, Her2 -, grade III)
  - Her2 positive
  - Basal (Triple negative)

# Breast cancer staging system

- What is new in the 8<sup>th</sup> edition of the AJCC staging?
- The tumor biology becomes part of the staging
- Clinical and pathologic prognostic stage
- Includes grade and receptor status

# Breast cancer staging system

- 1.5cm breast cancer and one positive sentinel node
- Per 7<sup>th</sup> edition: T1cN1a, Stage IIA
- Per 8<sup>th</sup> edition: T1cN1a
  - If grade I, triple positive ---- stage IB
  - If grade II, ER(+), PR(-), Her2 (-) ---- stage IIA
  - If grade III, triple negative ---- stage IIB



# Breast cancer staging system

- The new staging reflects prognosis better
- Lower stage does not mean less treatment is needed!!
- Lower stage means better prognosis with appropriate treatment

# Breast cancer staging system

- T3N1 grade II, triple (+) tumor is stage IIA (formerly IIIA)
- This reflects better prognosis with
  - surgery
  - radiation
  - endocrine therapy
  - Her 2 targeted chemotherapy

# Breast cancer staging system

- Incorporation of genomic assays in the staging
- Several multigene panel were considered:
  - Oncotype Dx
  - MammaPrint
  - Breast cancer index
  - Endopredict
  - PAM50
  - IHC4

# Breast cancer staging system

- Oncotype Dx only incorporated so far, due to high quality data (Level I evidence)
- Oncotype Dx is a 21 gene assay performed on ER/PR (+), Her2 neu (-) tumors
- The result is the Recurrence Score
- Based on the RS ( low, intermediate, high) we determine risk of recurrence with endocrine therapy alone and benefit from chemotherapy

# Breast cancer staging system

- Tailor Rx trial
- Low risk arm: ER/PR(+), Her2 (-)  
node negative  
1.1-5cm or 0.6-1cm for grade II-III  
Oncotype RS <11
- Overall survival 98% at 5 years with endocrine therapy only

# Breast cancer staging system

- Based on the first results from the Tailor Rx trial

pT1-T2N0 tumors that are

- ER/PR(+), Her2 (-)

- RS < 11

are given a pathologic prognostic stage IA

# Case presentation

- 44yo AA patient presenting with a new left breast mass on mammogram
- Pat medical history: HIV positive, depression, hypertension, Stevens-Johnson syndrome, stenosis of larynx
- Past surgical history: tracheostomy 11/2016
- Family history: unilateral breast cancer in the paternal grandmother at age 73
- GYN history: G3P3, no breastfeeding, no OCP, pre-menopausal

# Case presentation

- On exam she had a 2cm mass in the left breast 2:00
- No adenopathy
- US-guided biopsy showed invasive ductal carcinoma grade 3, ER/PR/Her2neu negative (triple negative)
- cT1cN0



# Case presentation

- She had genetic testing---negative
- She had a left lumpectomy and SNB
- The pathology showed an 1.8cm focus of grade 3 IDC  
4 sentinel nodes were negative for metastasis.
- pT1cN0

<b>T1* N0 M0</b> <b>T0 N1mi M0</b> <b>T1* N1mi M0</b>	<b>G2</b>	<b>Positive</b>	Positive	Positive	IA	
				Negative	Negative	IA
				Positive	Positive	IA
		<b>Negative</b>		Negative	Negative	IA
				Positive	Positive	IA
				Negative	Negative	IB
	<b>G3</b>	<b>Positive</b>	Positive	Positive	IA	
				Negative	Negative	IA
				Positive	Positive	IA
		<b>Negative</b>		Negative	Negative	IA
				Positive	Positive	IA
				Negative	Negative	IB

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## 48. Breast

When TNM is...	And Grade is...	And HER2 Status is...	And ER Status is...	And PR Status is...	Then the Clinical Prognostic Stage Group is...
				<b>Negative</b>	<b>IB</b>
When TNM is...	And Grade is...	And HER2 Status is...	And ER Status is...	And PR Status is...	Then the Clinical Prognostic Stage Group is...

# Case presentation

- Adjuvant chemotherapy
- Adjuvant radiation

# Case presentation

- 69yo AA patient presenting with a right breast mass on mammogram
- Past medical history: Hypertension, impaired fasting glucose, obesity, osteoarthritis, vitamin D deficiency
- Past surgical history: Abdominoplasty, left knee replacement 2014, right knee replacement 2015
- Family history: no history of breast or ovarian cancer
- GYN history: G2P2, + breastfeeding, + OCPs, no HRT, postmenopausal

# Case presentation

- On exam she had a 3cm mass in the right lower inner breast
- No adenopathy
- US-guided biopsy showed invasive ductal carcinoma, grade 2, ER/PR positive 90%, Her2 neu negative.
- cT2N0

# Case presentation

- She had right partial mastectomy and sentinel node biopsy
- The pathology showed a 2.8 cm focus of grade 2 invasive ductal carcinoma
- 1 of 3 sentinel nodes was positive
- pT2N1----stage IIB with AJCC 7<sup>th</sup> edition

## 48. Breast

When TNM is...	And Grade is...	And HER2 Status is...	And ER Status is...	And PR Status is...	Then the Pathological Prognostic Stage Group is...	
<p>T2 N1*** M0</p> <p>T3 N0 M0</p>	G1	Positive	Positive	Positive	IA	
			Negative	Negative	IIB	
			Positive	Positive	IIB	
			Negative	Negative	IIB	
		G2	Positive	Positive	Positive	IB
				Negative	Negative	IIB
				Positive	Positive	IIB
				Negative	Negative	IIB
	Negative		Positive	Positive	IB	
			Negative	Negative	IIB	
			Positive	Positive	IIB	
			Negative	Negative	IIB	
	G3	Positive	Positive	Positive	IB	
			Negative	Negative	IIB	
			Positive	Positive	IIB	
			Negative	Negative	IIB	
		Negative	Positive	Positive	IIA	
			Negative	Negative	IIB	
			Positive	Positive	IIB	
			Negative	Negative	IIIA	

# Case presentation

- Oncotype RS: 11-low
- Adjuvant endocrine therapy
- Adjuvant radiation



# Case presentation

- Oncotype RS: 11-low
- Adjuvant endocrine therapy
- Adjuvant radiation

# Case presentation

- 65yo Caucasian patient presenting with a new area of left breast architectural distortion on mammogram
- Past medical history: Hyperlipidemia, hypertension, Diabetes type II, Cushing's s/p adrenalectomy
- Past surgical history: Tubal ligation, left adrenalectomy 2010, bilateral breast excisions-benign
- Family history: negative for breast or ovarian cancer, no Ashkenazi Jewish ancestry
- GYN history: GOPO, +OCPs, +HRT Premarin for 10 years, post-menopausal

# Case presentation

- On exam there were no palpable masses or adenopathy
- US guided biopsy showed invasive mammary carcinoma, low grade, ER positive >90%, PR positive >10%, and HER2neu 2+ by IHC, FISH amplified (triple positive tumor)
- cT1bN0

# Case presentation

- She had a left breast NL lumpectomy and SNB
- The pathology showed a 1.5cm focus of grade 2 invasive ductal carcinoma
- 2 of 4 SN positive
- pT1cN1a --- stage IIA with the AJCC 7<sup>th</sup> edition

## 48. Breast

When TNM is...	And Grade is...	And HER2 Status is...	And ER Status is...	And PR Status is...	Then the Pathological Prognostic Stage Group is...
T0 N1** M0 T1* N1** M0 T2 N0 M0	G1	Positive	Positive	Positive	IA
				Negative	IB
		Negative	Positive	Positive	IB
				Negative	IIA
		Positive	Positive	Positive	IA
				Negative	IB
	G2	Positive	Positive	Positive	IA
				Negative	IB
		Negative	Positive	Positive	IB
				Negative	IIA
		Positive	Positive	Positive	IA
				Negative	IIA
	G3	Positive	Positive	Positive	IA
				Negative	IIA
		Negative	Positive	Positive	IIA
				Negative	IIA
		Positive	Positive	Positive	IB
				Negative	IIA
	Negative	Positive	Positive	IIA	
			Negative	IIA	

# Case presentation

- Adjuvant chemotherapy to include Her2 targeted agent
- Adjuvant radiation
- Adjuvant endocrine therapy

Questions?