EARLY STAGE BREAST CANCER
Epidemiology of breast cancer
5-10% all breast cancers

10-20% male breast cancers

Incidence in the general population is <<1%

Incidence in Ashkenazi 2%, 10% if there is a family history

70% risk of breast cancer if BRAC +

Risk if PALB2 5-9 fold increase
Identified in 1990
- Codes for suppressor gene
- Chromosome 17
- More often associated with triple negative disease
- Increased risk ovarian cancer (20-40 %), pancreatic (5%), less often cervical, uterine, and colon
BRAC 2
- Identified on 1997
- On chromosome 13
- Increases risk ovarian, pancreatic, stomach, gb, melanoma
- Tumor suppressor gene
Screening mammography

- 17-40% reduction in mortality
- 10% false positives: 8/10 resolved by additional views or U/S
- One of three biopsies diagnosed with malignancy
Screening recommendations general population

- Overall accuracy 78% age over 50 yo 83%
- ACS rec starting at 45 yo
- 50-74 yo every two years
- Greater than 75 yo continue screening for life expectancy >= 10 years
HIGH RISK SCREENING

Based on family hx-yearly starting at 40 yo

BRAC-MRI and mammogram yearly

Thoracic radiation-mammograms and MRI starting 8-10 years after RT
MRI

- Does not replace mammography
- Specificity 37-97%
- Affected by menstrual cycle
- False positive as high as 30%
- Can lead to more aggressive treatment by detecting clinically insignificant synchronous lesions.
CLINICAL PRESENTATION AND WORK UP

RADIOGRAPHIC

PALPABLE

SECONDARY SIGNS OR SYMPTOMS
Compare different parameters in fine-needle aspiration cytology and core needle biopsy in studies that have compared both these diagnostic modalities.
Atypical Ductal Hyperplasia

- <20 % progress to malignancy if untreated
- Risk not limited to ipsilateral breast
- Constitute 3 % of benign breast biopsies
- Defined pathologically as less than 2 mm or only partially involved duct
- 20% upgraded on excision
- Observation an option
- Endocrine prevention an option
LCIS

- Tis
- 5.3% of insitu lesions
- Increased risk bilaterally
- Rarely upgraded (1-5%)
- Lumpectomy alone vs observation
- RT not recommended
- Endocrine therapy controversial
DCIS

- Tis
- 20% of all newly diagnosed “breast cancers”
- Excision alone-26-36% local recurrence in 13-20 year f/u
- RT reduces local recurrence by 50% but no change in mortality rate (3%)
- Endocrine therapy reduces local recurrence by 30% no change in mortality rate
- Consideration of oncotype scoring
Prophylactic Endocrine therapy

- Tamoxifen
  - 30% reduction in incidence
  - No improvement in survival
  - DVT risk
  - Uterine cancer risk
  - Raloxifene-no uterine cancer risk

- Aromatase inhibitors
  - 50% decrease in incidence
  - No improvement in survival
  - Osteoporosis risk
INVASIVE BREAST CANCER
Large tumors and tumors out of proportion to breast size in patients desiring breast conservation

Inflammatory, although not considered early stage independent of nodal status

Multiple + LN

Stage >= III

Locally advanced (also not considered early stage)

Her 2 neu + tumors > 2 cm
Indications for mastectomy

- Multiple tumors in different quadrants
- Tumor size out of proportion to breast size
- Inflammatory breast cancer
- Contraindication to RT
- Patient choice
SURGICAL TECHNIQUES
LUMPECTOMY
Mastectomy incisions
Nipple sparing mastectomy incision
BRAC patient treatment options

- Marked increase in risk to contralateral breast
- Increased risk second primary in ipsilateral breast
- Bilateral mastectomy shown to reduce mortality by 50%
- Oophrectomy strongly recommended
staging of breast cancer
Typically ordered for ER+ her 2 neu neg LN neg tumors.

Recent Taylor X study validated use in 1-3 + LN patients

More often decreases the need for chemotherapy in low and intermediate risk groups
Oncotype for invasive breast cancer
Oncotype for early stage breast cancer
ADJUVANT THERAPY
Lowers local recurrence rates to approx 5 %

Related to margin status-usually “no ink” for invasive and 1 mm for insitu

Related to stage and prognostic indicators (ER and her 2 neu)

PBI equivalent to WBI
premenopausal only
Nonsteroidal
Inhibits binding of estradiol to estrogen receptors
Inhibits tumor cell growth
May not be quite as effective in ER + but PR – tumors
50% reduction
Aromatase inhibitors

- Interferes with the production of estrogens from androgens

- Limited ability to reduce circulating estrogen (hence not in used premenopausal women)

- Risk reduction 40-50%

- Contralateral risk reduction
## Survival rates for Breast Cancer

<table>
<thead>
<tr>
<th>Stage at Diagnosis</th>
<th>Nodes Involved</th>
<th>Cumulative Risk</th>
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<tbody>
<tr>
<td>T1</td>
<td>0</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>1 - 3</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>4 - 9</td>
<td>34%</td>
</tr>
<tr>
<td>T2</td>
<td>0</td>
<td>19%</td>
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<tr>
<td></td>
<td>1 - 3</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>4 - 9</td>
<td>41%</td>
</tr>
</tbody>
</table>
SURVEILLANCE

Advanced imaging for signs or symptoms (such as bone pain)
Advanced imaging for abnormal conventional studies (such as CXR)
Routine annual blood work: CBC  CMP
Consider tumor markers: ca 15.3  29.27  CEA
Annual 3D mammograms
MRI’s based on clinical
DEXA every 2 years for patients on AI
My own tips

- Reassurance
- Precancer terminology for insitu lesions
- True genetic risk
- More is not necessarily better
- Real risk based on current age, not lifetime risk