BREAST CANCER
TYPES, STAGING & PROGNOSTIC PARAMETER

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One million new cases every year world wide

In USA one lac new cases every year, 30000 die of it.

In India it is commonest cancer in females.
RISK FACTORS

- Geography
- Family History
- Menstrual & Reproductive Factors
- Fibrocystic Disease with Epithelial Hyperplasia
- Oral Estrogen & Hormone Replacement Therapy
- Radiation
CLASSIFICATION

1) Epithelial tumors
   - DCIS       IDC
   - LCIS       ILC

2) Mesenchymal tumors

3) Other type of tumors
DCIS TYPES

- Comedo
- Cribriform
- Solid
- Clinging
- Micropapillary
- Papillary type
- Neuroendocrine type
INVASIVE DUCT CARCINOMA TYPES

- TUBULAR
- CRIBRIFORM
- MUCINOUS
- MEDULLARY
- NOS
- APOCRINE
- PAPILLARY
- JUVENILE SEVETORY CARCINOMA
- METAPLASTIC
- NEUROENDOCRINE TYPE TUMOR
- ADENOID CYSTIC CARCINOMA
- MUCOEPIDERMOID CARCINOMA
- LOW GRADE ADENOSQUAMOUS CARCINOMA
- MALIGNANT MYOEPITHELIOMA
INVASIVE LOBULAR CARCINOMA

- CONVENTIONAL
- TUBULOALVEOLER
- SIGNET RING TYPE
Mesenchymal Type Tumors

- MALIGNANT PHYLLLOIDES TUMOR
- STROMAL SARCOMA
- ANGIOSARCOMA
Other Types

- NHL
- HD
- PLASMACYTOMA
- LEUKEMIC INFILTRATE
- SKIN TUMORS
PAGET’S DISEASE OF NIPPLE AND AREOLA
Normal anatomy of breast
INTRA DUCTAL CARCINOMA
MICRO PAPILLARY

Figure 227
INTRADUCTAL CARCINOMA
Micropapillary growth pattern in which discontinuous cellular fragments are related to the plane of sectioning. (Figures 227 and 228 are from the same patient.)
INTRADUCTAL CARCINOMA - CRIBRIFORM

Figure 231
INTRADUCTAL CARCINOMA

The cribriform growth pattern results from the merging of intraductal bridges of epithelial cells. (Figures 231 and 232 are from the same patient.)
HISTOLOGIC GRADE
WELL DIFFERENTIATED PATTERN

Figure 247
HISTOLOGIC GRADE
Well-differentiated pattern retains a tendency to form tubules and glands.
INVASIVE LOBULAR CARCINOMA

Figure 259
INVASIVE LOBULAR CARCINOMA
Tumor cells with “classic” pattern arranged around duct in “bull’s eye” fashion.
STAGING (TNM)

TNM- T

- $T_x$
- $T_o$
- $T_{is}$

1) DCIS
2) LCIS
3) PAGETS
T1 - 2 CM. OR LESS
T1a - 0.1 to 0.5 Cm.
T1b - 0.5 to 1.0 Cm.
T1c - 1.0 to 2.0 Cm.
T1 - MIC 0.1 CM. OR LESS
T2 - 2 TO 5 CM
T3 - MORE THAN 5 CM.
T4 -
T4a - EXTENSION TO CHEST WALL
T4b - EXTENSION TO SKIN
T4c - BOTH T4a AND T4b
T4d - INFLAMMATORY CARCINOMA
## TNM - N

<table>
<thead>
<tr>
<th>( N_1 )</th>
<th>1 to 3 NODES +VE [AXILLARY OR INT. MAMMARY]</th>
</tr>
</thead>
<tbody>
<tr>
<td>( N_{1a} )</td>
<td>MICROMETS 0.2 TO 2 mm</td>
</tr>
<tr>
<td>( N_{1b} )</td>
<td>METS IN INT. MAMMARY NODES WITHOUT AXILLARY NODES</td>
</tr>
<tr>
<td>( N_{1c} )</td>
<td>BOTH OF ABOVE</td>
</tr>
<tr>
<td>$N_2$</td>
<td>4 to 9 AXILLARY NODES</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------</td>
</tr>
<tr>
<td>$N_{2a}$</td>
<td>ONE TUMOR DEPOSIT MORE THAN 2 mm.</td>
</tr>
<tr>
<td>$N_{2b}$</td>
<td>INT. MAMMARY NODE METS. WITHOUT AXILLARY NODES</td>
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</table>
**PN₃-10 OR MORE AXILLARY NODES**

<table>
<thead>
<tr>
<th>N₃a</th>
<th>10 OR MORE NODES WITH ONE DEPOSIT LARGER THAN 2 MM OR METS. TO INFRACLAVICULAR NODES.</th>
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</thead>
<tbody>
<tr>
<td>N₃B</td>
<td>IPSILATERAL INT. MAMMARY NODES WITH AXILLARY NODES [1 TO 3]</td>
</tr>
<tr>
<td>N₃C</td>
<td>METS IN IPSILATERAL SUPRACLAVICULAR NODES.</td>
</tr>
<tr>
<td>( M_x )</td>
<td>NOT ASSESSED</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
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<tr>
<td>( M_0 )</td>
<td>NO METS. TO DISTANT ORGANS</td>
</tr>
<tr>
<td>( M_1 )</td>
<td>METS. TO DISTANT ORGANS</td>
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## STAGE

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<th>T_{is}</th>
<th>N_0</th>
<th>M_0</th>
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<td>T_1</td>
<td>N_0</td>
<td>M_0</td>
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<tr>
<td>STAGE-IIA</td>
<td>T_1</td>
<td>N_0</td>
<td>M_0</td>
</tr>
<tr>
<td></td>
<td>T_1</td>
<td>N_0</td>
<td>M_0</td>
</tr>
<tr>
<td></td>
<td>T_2</td>
<td>N_0</td>
<td>M_0</td>
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<tr>
<td>STAGE-IIIB</td>
<td>T_3</td>
<td>N_0</td>
<td>M_0</td>
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<tr>
<td>STAGE : IIIA</td>
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<td>$N_2$</td>
<td>$M_0$</td>
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<tr>
<td></td>
<td>$T_1$</td>
<td>$N_2$</td>
<td>$M_0$</td>
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<td>$T_2$</td>
<td>$N_2$</td>
<td>$M_0$</td>
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<td>$T_3$</td>
<td>$N_1/N_2$</td>
<td>$M_0$</td>
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<tr>
<th>STAGE- IIIIB:</th>
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<th>$M_0$</th>
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<td>$N_0$</td>
<td>$M_0$</td>
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<tr>
<td></td>
<td>$T_4$</td>
<td>$N_2$</td>
<td>$M_0$</td>
</tr>
<tr>
<td>STAGE-IIIIC</td>
<td>Any T</td>
<td>N&lt;sub&gt;3&lt;/sub&gt;</td>
<td>M&lt;sub&gt;O&lt;/sub&gt;</td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>STAGE-IV</td>
<td>Any T</td>
<td>Any N</td>
<td>M&lt;sub&gt;1&lt;/sub&gt;</td>
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PROGNOSTIC PARAMETER

1) GRADE, Modified Bloom – Rechardson Score System
   Score - 3 - 5 (Grade – 1)
   - 6 - 7 (Grade – 2)
   - 8 - 9 (Grade – 3)

2) Invasiveness of tumor
   In situ carcinoma have excellent prognosis
3) Pathological Staging
   TNM
   Minimum breast carcinoma (1 cm or less) has excellent prognosis

4) Site
   Medially located disease has increased chances of metastasis & early death

5) Tumor Types
6) Patients age 50yrs & more and less than 35 yrs of age have worse prognosis
7) Pregnancy associated disease Worse prognosis
8) Early diagnosis or Asymptomatic disease
9) Margins, Necrosis, Stromal reaction
10) Microvessel density
11) ER/PR Status
12) HER-2 Neu
13) Vimentin Positivity
14) P 53, BCl 2
15) Nipple / Skin Invasion
16) Lymphatic / Vascular Invasion
17) DNA Ploidy, Cell Proliferation Index, Cyclin – D
18) Axillary Nodes, Int. Mammary Nodes
Thank you