A Case of *De Novo* Metastatic Breast Cancer With Equivocal HER-2 Status
Disclosures

No conflicts of interest to disclose
**Part 1: Clinical Presentation and Diagnosis**

**Patient**
36 yo woman, no comorbidities
No family history of breast or other cancer

**Presentation**
Persistent lumbar pain
Detection of lump in the left breast at self-examination

**Breast Exam**
Clinical exam: Lesion of 25 mm in the left upper-intern quadrant
Breast Ultrasound + Mammography: confirmed lesion of 32 mm

**Work-up**
Whole body PET-scan and Vertebral Column MRI: Multiple supra-clavicular, axillary, and mediastinal lymph nodes; Bone metastases in C6, L3, sternum

**US-guided Breast Biopsy**
Invasive Ductal Carcinoma
Estrogen Receptor + (90%)
Progesteron Receptor + (50%)
HER-2 IHC score 2+, FISH equivocal

**Genetic Testing**
No mutations linked to hereditary breast cancer (BRCA1, BRCA2)

**FISH Equivocal**
HER2 copy number/cell= 4.97
HER2/CEP17 ratio= 1.55

Di Meglio A. - HER-2 Equivocal MBC
Part 2: Choice of First Line treatment and Follow-up

First Line
- Taxol 80 mg/m² weekly
- Trastuzumab 8/6 mg/Kg 3-weekly
- Pertuzumab 840/420 mg 3-weekly
  
  *Denosumab*
  
  for 6 cycles

Maintenance
- Trastuzumab 3-weekly
- Pertuzumab 3-weekly
- Tamoxifen 20 mg daily
  
  for 3 cycles

Breast Local Treatment
- Radical Left Mastectomy
  
  (strongly pursued by patient)

PET-scan (after 6 cycles): Partial Response (A1, A2)
  
  (shrinkage of breast nodule and of nodal mets)

PET-scan (after 3 cycles): confirmed Partial Response (B1, B2)

Pathology Report: Invasive ductal carcinoma
  
  ø 4 mm with substantial fibrosis,
  
  almost Pathologic Complete Response
  
  ypT1a ypNx

*Patient was continuously kept on Denosumab

Di Meglio A. - HER-2 Equivocal MBC
Part 3: Treatment upon Progression

**Maintenance**
- Trastuzumab 3-weekly
- Pertuzumab 3-weekly
- Tamoxifen 20 mg daily 
  for 3 cycles

**Re-biopsy of palpable metastatic left axillary lymph nodes**

**Second line**
- Eribuline 1.23 mg/m² (d1-8) 3 weekly 
  for 6 cycles

**PET-scan (after 3 cycles):** Progressive Disease (C1, C2) bone and lymph nodes progression (palpable)

**Pathology Report:**
- Adenocarcinoma
- Estrogen Receptor + (100%)
- Progesteron Receptor + (90%)
- HER-2 IHC score 2+; FISH -

**FISH Negative**
- HER2 copy number/cell= 2.79
- HER2/CEP17 ratio= 1.37

**PET-scan (after 3 and 6 cycles):** Partial Response
But discontinued for neurotoxicity

**Re-staging PET-scan:** partial response
Overall patient is doing well

**Ongoing therapy (for 5 months)***
- Ovarian Suppression (Oophorectomy)
- Letrozole 2.5 mg daily
- Palbociclib 125 mg 3 wks on/1 wk off

*Patient was continuously kept on Denosumab

ESMO PRECEPTORSHIP PROGRAMME
**A Case of *De Novo* Metastatic Breast Cancer**

With Equivocal HER-2 Status: Key-Points for Discussion

<table>
<thead>
<tr>
<th>Part 1: Clinical Presentation and Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• When should we be content with an equivocal HER-2 result?</td>
</tr>
<tr>
<td>• When should we pursue re-biopsy before initiating any treatment?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 2: Choice of First Line Treatment and Follow-up</th>
</tr>
</thead>
</table>
| • Which first-line treatment for HER-2 equivocal tumors?  
  [Cleopatra vs. Paloma] |
| • What is the best endocrine maintenance treatment?  
  [Tam vs. AI] |
| • Any role for breast local treatment?  
  [Mastectomy vs. BCS] |
| Best candidates? Best timing? Which objectives? |

<table>
<thead>
<tr>
<th>Part 3: Treatment upon Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Re-biopsy of accessible metastatic disease?</td>
</tr>
<tr>
<td>• Which treatment upon progression?</td>
</tr>
<tr>
<td>• Chemo vs. Endocrine backbone? Type of agent?</td>
</tr>
</tbody>
</table>
Thank you for your attention