Management of Oligo-metastatic Breast Cancer

Ofra Maimon, MD

Sharett Institute of Oncology
Hadassah-Hebrew University Medical Center,
Jerusalem, Israel
Case Presentation

• A 60-year-old, otherwise healthy, presented with a 5.5 cm left breast mass, ER/PR/HER2 positive, **Grade III Invasive duct carcinoma**.

• MRI- Axillary lymph node involvement.
Case Presentation—Cont.

Systemic workup:
• Brain MRI: Normal
• PET-CT:
  – Breast (FDG) avid mass and multiple lesions in the left axilla
  – FDG-avid mass in the liver, segment IV
• Liver biopsy: Consistent with breast primary

Consequently diagnosed as **Stage IV (T3N2M1)**
Treatment:

- Combination chemotherapy: docetaxel + herceptin + pertuzumab – for 6 cycles
- PET-CT: Near complete response
- Continued herceptin + pertuzumab and an aromatase inhibitor was added.
- PET-CT: Near complete response
What to do next?

1. Continue the same treatment until disease progression
2. Breast conserving therapy (clip!!) / mastectomy + axillary lymph node dissection + liver resection
3. Breast conserving therapy / Mastectomy + Axillary lymph node dissection + Radiofrequency ablation of liver lesion
4. Other options?
Oligo-metastases

Karnofsky Memorial Lecture

S. Hellman

R. Weichselbaum

Breast Cancer Innovations
Oligo-metastases

Spectrum <--> Halsted (systemic)


Breast Cancer Innovations
Oligo-metastases

Oligo-metastases


Oligo-metastases

**Randomized (Suggestive) Evidence: Ablative Therapy Improves Survival**

**MDACC/Colorado** Trial: Phase 2 - Oligometastatic NSCLC [n=49]
Local consolidation vs. maintenance therapy or observation
RESULTS: **PFS better in LCT arm (P = .0054)**
(Gomez et al. Lancet Oncology 2016)

**UTSouthwestern** Trial: Phase 2 - Oligometastatic NSCLC [n=29]
Maintenance chemotherapy (mChemo) vs. SABR + mChemo
RESULTS: **PFS better in SABR + mChemo arm (P = .01)**
(Iyengar et al. JAMA Oncol 2018)

**STOMP** Trial: Phase 2 - Oligometastatic Prostate cancer [n=62]
Surveillance vs. metastasis-directed therapy
RESULTS: **PFS better in LCT arm (P = .0054)**
(Ost et al. J Clin Oncology 2018)

The ORIOLE trial is the first randomized, non-blinded Phase II interventional study in North America evaluating the safety and efficacy of SABR in oligometastatic hormone-sensitive prostate cancer.

**ORIOLE** Trial: Phase 2 - Oligometastatic Prostate Cancer [n=54]
Observation vs. SABR
RESULTS: **PFS better in SABR arm (P = .03)**
(Radwan et al. BMC Cancer 2017 & personal communication from Phouc Tran)
Oligo-metastatic Breast cancer

- 3-10% of all metastatic breast cancer
- 14,000 new cases in USA per year

<table>
<thead>
<tr>
<th>Author/Study</th>
<th>Phase</th>
<th>No. of Patients</th>
<th>ER/PR+ (%)</th>
<th>HER2 Status</th>
<th>≤ 2 Met Sites (%)</th>
<th>≤ 4 Met Sites (%)</th>
<th>Arms</th>
<th>PFS (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albain 2008</td>
<td>II</td>
<td>599</td>
<td>32</td>
<td>-</td>
<td>57</td>
<td>91</td>
<td>1. Gem/Paclitaxel</td>
<td>9.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Paclitaxel</td>
<td>8.4</td>
</tr>
<tr>
<td>Bergh 2012</td>
<td>III</td>
<td>593</td>
<td>72</td>
<td>Pos</td>
<td>52</td>
<td>-</td>
<td>1. Sunitinib/Docetaxel</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Docetaxel</td>
<td>8.3</td>
</tr>
<tr>
<td>Tawfik 2013</td>
<td>II</td>
<td>30</td>
<td>77</td>
<td>Neg</td>
<td>50</td>
<td>-</td>
<td>1. Vinorelbine/Capecitabine</td>
<td>8.6*</td>
</tr>
<tr>
<td>Huvitz 2013</td>
<td>IIIR</td>
<td>137</td>
<td>54</td>
<td>Pos</td>
<td>49.3</td>
<td>-</td>
<td>1. Trastuz/Docetaxel</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. T-DM1</td>
<td>14.2</td>
</tr>
<tr>
<td>Gianni 2013</td>
<td>III</td>
<td>424</td>
<td>51</td>
<td>Pos</td>
<td>50</td>
<td>-</td>
<td>1. Docetaxel/Trastuz</td>
<td>13.7</td>
</tr>
<tr>
<td>AVEREL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Docetaxel/Trastuz/Bev</td>
<td>16.5</td>
</tr>
<tr>
<td>Sledge 2003</td>
<td>III</td>
<td>739</td>
<td>45</td>
<td>-</td>
<td>49</td>
<td>-</td>
<td>1. Doxorubicin</td>
<td>6*</td>
</tr>
<tr>
<td>E1193</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Paclitaxel</td>
<td>6.3*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Doxorubicin/Paclitaxel</td>
<td>8.2*</td>
</tr>
</tbody>
</table>

Abbreviations: ER, estrogen receptor; PR, progesterone receptor; met, metastases; PFS, progression-free survival; gem, gemcitabine; pos, positive; neg, negative; trastuz, trastuzumab; Bev, bevacizuab.
*Time to failure
Case Presentation-Cont.

• Patient underwent mastectomy with lymph node dissection:
  Pathological complete response at the breast, 3/19 nodes involved with extracapsular extension.

• Radiotherapy to chest wall, supra-clavicular & internal mammary nodes

• Radiofrequency ablation of the liver lesion

• Continues herceptin, pertuzumab, and hormonal therapy.
2 years later...

- Pathologic FDG avid peri-portal lymphadenopathy 1.5CM
- Otherwise - systemically controlled
- Well-tolerate maintenance systemic therapy
- ECOG = 0, she continues to work part-time
What treatment would you recommend?

1. Continue the same + local treatment
2. Switch to T-DM1
3. Switch to herceptin + pertuzumab + chemo

Panel discussion

What if the new lesion was in her lung/bone/brain??
Case Presentation-Cont.

• Patient was referred for stereotactic body radiation therapy
• PET-CT three months after SBRT demonstrated complete response
• Currently—No evidence of disease, continues herceptin, pertuzumab, AI
The Role of radiation therapy in Oligo-metastatic Breast Cancer
Panel discussion:
Would you treat differently if the patient was Triple negative/ HER2-?
Summary

• Oligo-metastatic breast cancers are rare and may have curative potential.
• These patients can be identified through clinical features and maybe molecular parameters.
• The biology of oligo-metastatic breast cancer is not well understood.
• Adding radiation therapy in this setting may have added value.
Thank You