Locally advanced breast cancer. Relevance of two cases, results of neoadjuvant and surgical therapies and reflections how to optimise the multidisciplinary approach.

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CASE 1 HISTORY

39 years old

Medical History
- Hashimoto Thyroiditis
- Chronic Glomerulonephritis
- APC resistance, Leiden type

Family History
- Breast cancer in maternal aunt age > 50

History of present illness
- Big ulcerated mass in the right breast (tumor growth noticed 4 months earlier)
- Misunderstanding as mastitis
- Fear and shame of the patient
HISTORY OF PRESENT ILLNESS

Right breast 7-cm ulcerated mass in the upper outer quadrant
Palpable axilla nodes

cT4 N+
HISTORY OF PRESENT ILLNESS
CLINICAL SCENARIO ASSESSMENT

Needle Core biopsy breast
Invasive ductal carcinoma G3. No in situ carcinoma. ER and PR negative. Her-2 negative. Ki-67=90%.

* Courtesy of Dr. Enrico Orvieto – Section of Anatomic Pathology, Department of Oncological and Surgical Sciences, University of Padova, Padova, Italy.
QUESTION #1

Which is the best therapeutic approach for this patient?

1. Neoadjuvant chemotherapy

2. Surgery

3. Radiotherapy and neoadjuvant chemotherapy
CLINICAL SCENARIO ASSESSMENT

MULTIDISCIPLINARY MEETING

NO DOUBT!

..but...

Chronic renal failure
Young woman
Surgery?
• PET-CT

• Neoadjuvant chemotherapy
* Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
PET-CT

* Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
NEOADJUVANT CHEMOTHERAPY

Epirubicin 75 mg/m² + Docetaxel 75 mg/m²

6 courses
..AND..

..AFTER THREE COURSES..
..AND..

..AFTER THE 4° COURSE..
..AND..  

..AFTER THE 5° COURSE..
QUESTION #2

What type of surgery do You offer to the patient?

1. Simple mastectomy and BLS

2. Mastectomy and immediate reconstruction (One stage? Two stages?)

3. Simple mastectomy and axillary dissection
Right mastectomy and right axillary dissection

yT4b N0
PATHOLOGY

Pre Chemotherapy

Post Chemotherapy and Surgery

* Courtesy of Dr. Enrico Orvieto – Section of Anatomic Pathology, Department of Oncological and Surgical Sciences, University of Padova, Padova, Italy.
QUESTION #3

What is the best choice to manage the patient after surgery?

1. Adjuvant chemotherapy
2. Follow up
3. Radiotherapy and adjuvant chemotherapy
FINAL TREATMENT

• Treatment
  - Sequential Epirubicin/Docetaxel

• Response
  - Partial but good clinical response in breast and axilla

• Imaging
  - PET-CT

• Surgery
  - Mastectomy and axillary dissection

• Pathology
  - Infiltrating ductal carcinoma yT4b yN0 G3

• Post-operative therapy
  - follow up
CASE 2 HISTORY

45 years old

**Medical History**
Nothing relevant to report.

**Family History**
No history of family breast or ovarian cancer.
HISTORY OF PRESENT ILLNESS

Left breast 3-cm mass in the upper outer quadrant, skin edema and axial lymph-node swelling.
CLINICAL SCENARIO ASSESSMENT

Needle Core biopsy breast
Infiltrating lobular carcinoma.
ER and PR negative.
Her-2 negative.
Ki-67=40%

* Courtesy of Dr. Enrico Orvieto – Section of Anatomic Pathology, Department of Oncological and Surgical Sciences, University of Padova, Padova, Italy.
CLINICAL SCENARIO ASSESSMENT

PLAN

- PET-CT
- Mammoscintigraphy
- Neoadjuvant Chemotherapy
- MRI pre and post neoadjuvant treatment
PET-CT

* Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
PET-CT

*Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.*
* Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
The “old” and “current” nuclear medicine imaging in locally advanced breast cancer patient evaluation: 99mTc-MIBI mammoscintigraphy (MMS) and fluorodeoxyglucose (FDG) positron emission tomography (PET)/computed tomography (CT)

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**SCINTIMAMMOGRAPHY**

**25° Congress of European Association of Nuclear Medicine**

**Rationale**

- Scintimammography (MMS) has shown a great ability in identifying multi-drug resistance to a large number of chemo-therapeutic agents in breast cancer.

- 18F- FDG PET/CT can provide important information in LABC patients with stage II or III detecting unknown lymph nodes metastases outside axilla levels I and II and occult distant metastases.

* Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
AIM

In the context of BLS-S102 protocol, we aimed to evaluate the evidences obtained from association of MMS and FDG PET/CT in patients with LABC.
Conclusions

• From the preliminary results emerged that a significant difference related to WO%I was found between TN and no-TN patients.

• Therefore, we can hypothesize that a slow WO%I from early to late MMS scan is correlated with a major responsiveness to neoadjuvant treatment.

• Future perspectives: to continue the patient enrollment.

*Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
SCINTIMAMMOGRAPHY

Pre Chemotherapy

CASE 2

*Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV – IRCCS, Padua, Italy.
SCINTIMAMMOGRAPHY

Post Chemotherapy

* Courtesy of Dr. Laura Evangelista – Radiotherapy and Nuclear Medicine Unit, Istituto Oncologico Veneto IOV - IRCCS, Padua, Italy.
Is mammoscintigraphy a good new way to evaluate LABC?
NEOADJUVANT CHEMOTHERAPY

Epirubicin 75 mg/m^2 + Docetaxel 75 mg/m^2

6 courses
Pre Chemotherapy

Post Chemotherapy
(miss the last course)

* Courtesy of Breast Imaging Unit – IOV Istituto Oncologico Veneto Padua, Italy
MRI

Pre Chemotherapy

Post Chemotherapy (miss the last course)

* Courtesy of Breast Imaging Unit – IOV Istituto Oncologico Veneto Padua, Italy
Pre Chemotherapy

Post Chemotherapy (miss the last course)

* Courtesy of Breast Imaging Unit – IOV Istituto Oncologico Veneto Padua, Italy
Pre Chemotherapy

Post Chemotherapy
(miss the last course)

* Courtesy of Breast Imaging Unit – IOV Istituto Oncologico Veneto Padua, Italy
QUESTION #2

What type of imaging could help you to choose the most suitable surgery?

1. MRI
2. PET-CT
3. Mammoscintigraphy
4. MRI and PET-CT/Mammoscintigraphy
Surgery Treatment: dimension of T pre or post neoadjuvant treatment?
SURGERY

Left quadrantectomy, left axilla dissection.

Right breast reshaping.

yT0 yN0
Pre Chemotherapy

Post Chemotherapy and Surgery

* Courtesy of Dr. Enrico Orvieto – Section of Anatomic Pathology, Department of Oncological and Surgical Sciences, University of Padova, Padova, Italy.
FINAL TREATMENT

• Treatment
  - Sequential Epirubicin/Docetaxel
• Response
  - Pathologic complete response
• Imaging
  - PET-CT
  - MRI pre and post-chemotherapy
  - Mammoscintigraphy
• Surgery
  - Quadrantectomy and axillary dissection, reshaping of controlateral breast
• Pathology
  - No cancer
• Post-operative therapy
  - Radiotherapy
STAY HUNGRY, STAY FOOLISH.

Thanks for the attention!