Society of Thoracic Surgeons

General Thoracic Surgery Database
Neoadjuvant Therapy Module Webinar

October 23, 2023
Agenda

• Welcome and Introduction
• Temporary Fields (Dr. Chris Seder)
• Neoadjuvant Therapy Module (Dr. Chris Seder and Dr. Stephen Broderick)
• Case Scenario (Ruth Raleigh, GTSD Clinical Consultant)
• Q&A
STS Temporary Fields

• Why are we activating these two fields?

• TempY/N1 (Seq. 4580) : Did the patient receive preoperative immunotherapy or a targeted agent directed at the lung cancer of interest?

• TempText (Seq.4620): If so, what agent?
GTSD Neoadjuvant Therapy Module

Administrative Data

General Thoracic Surgery Database

Neoadjuvant Therapy Module

Administrative Data

1) Participant ID (ParticID)
   * must provide value

2) Patient ID (PatID)
   * must provide value

3) Record ID (RecordID)
   * must provide value

4) Date of Surgery (SurgDt)
   * must provide value

Next >>

Powered by REDCap
GTSD Neoadjuvant Therapy Module

Medication Usage

*please note this version is not final
Case Scenario: GTSD Neoadjuvant Therapy Module

Ruth Raleigh BSN, RN
Clinical Consultant GTSD
October 23, 2023
What Are Driver Mutations?

Driver mutations are genetic changes that drive the development and progression of lung cancer. They often affect genes that encode for receptor tyrosine kinases (RTKs), such as EGFR, ERBB2, MET, RET, ALK, and ROS1. These mutations can also influence the risk of brain metastasis, which is a common complication of lung cancer.

Therapies that target driver mutations can improve the survival and quality of life of lung cancer patients, but resistance can also emerge over time.
Common Targeted Therapies: ‘ib’s and ‘mab’s

There are two basic types of targeted therapies:

- **Small molecule drugs**: Small molecule drugs are able to travel to the inside of a cancer cell and target proteins involved in cell growth. They are then able to block the signals that tell the cells to divide and grow. These medications are identified by the suffix “ib” such as erlotinib.

- **Monoclonal antibodies**: Monoclonal antibodies are similar to the antibodies your body makes in response to exposure to viruses and bacteria. Unlike those antibodies, however, monoclonal antibodies are "man-made" antibodies. Instead of fighting off viruses and bacteria, they target a specific molecular target (proteins) on the surface of cancer cells. These medications carry a suffix “mab” such as bevacizumab.

https://www.verywellhealth.com/cancer-treatment-4014177
Common Targeted Therapies: ‘ib’s and ‘mab’s

- gefitinib (Iressa)
- afatinib (Giotrif)
- erlotinib (Tarceva)
- dactomitinib (Vizimpro)
- osimertinib (Tagrisso)
- amivantamab (Rybrevant)
- ceritinib (Zykadia)
- alectinib (Alecensaro)
- brigitinib (Alunbrig)
- lorlatinib (Lorbrena)
- entrectinib (Rozlytrek)
- crizotinib
- sotorasib (Lumakras)
- dabrafenib (Tafinlar)
- trametinib (Mekinist)
- larotrectinib (Vitrakvi)
- tepotinib (Tepmetko)
- capmatinib (Tabrecta)
- pralsetinib (Gavreto)
- selpercatinib (Retevmo)
- bevacizumab (Avastin, Mvasi, Zirabev)
- ramucirumab (Cyramza)
Programmed Cell Death Ligand 1 aka PD-L1

PD-L1 is a protein that plays a role in the body's immune system.

It can bind to another protein called PD-1.

When this happens, the two proteins block the immune system from killing cancer cells.
Roll of Immunotherapies

PD-L1 binds to PD-1 and inhibits T cell killing of tumor cell

Blocking PD-L1 or PD-1 allows T cell killing of tumor cell
Common Immunotherapies: ‘mab’s

- atezolizumab (Tecentriq)
- cemiplimab (Libtayo)
- durvalumab (Imfinzi)
- ipilimumab (Yervoy)
- nivolumab (Opdivo)
- pembrolizumab (Keytruda)
- tremelimumab-actl (Imjudo)
- dostarlimab (Jemperli)
Impression:

In summary, Vanna White is a pleasant 54 y.o. female recently former heavy smoker (quit 2 weeks ago) with HTN, HLD, PCKD, severe PAD s/p RLE stent and small infrarenal AAA with a clinical stage IIB (cT3 cN0 M0), 2 cm central/hilar left lower lobe squamous cell carcinoma and an additional FDG-avid approximate 7 mm LLL nodule also adjacent to thoracic aorta, suspicious for malignancy, s/p neoadjuvant chemoimmunotherapy per CheckMate-816 protocol. However only received 1 cycle of nivolumab due to a immunotherapy-related rash after cycle 1 of treated with Prednisone taper.

I reviewed and interpreted the images in detail of restaging CT on 9/19/2023 which showed partial treatment response with an interval decrease in size of the LLL juxta-aortic nodule, however there was interval development of multiple peripheral areas of abnormally increased density in the liver ranging in size up to 12 mm which could be related to regenerative nodules vs, metastases vs perfusion artifact.
Note, PD-L1 results lagged original final pathology by ~1 month. Your pathology department will have a ‘usual’ turnaround time for EGFR/ALK etc and PD-L1 testing to result.
Impression:
#Stage IIB (cT3cN0.M0), non-small cell, squamous cell carcinoma of the lung
- 06/27/2023: EGFR and ALK mutation negative at Quest diagnostics.
- 07/03/2023: PD-L1 0% tumor cells positive for PD-L1.
- 07/24/2023: Cycle #1 carboplatin, paclitaxel, and nivolumab given in neoadjuvant setting with goal to complete 3 cycles followed by surgery
- 08/15/2023: Cycle #2 carboplatin, paclitaxel
- 09/06/2023: Cycle #3 carboplatin, paclitaxel
- 10/20/2023: Robotic Left Lower Lobectomy

#Rash, diffuse, initially popular, grade 2
- Developed following cycle 1, around 08/01/2023. Started on leg and then spread to back, abdomen, and arms. Associated itching which has been worsening.
- Rash significantly improved. Patient tapering off prednisone. Taper should be finished by next week.
- Pt was seen by dermatology who felt rash was due to nivolumab
- Rash did not become worse with cycle 2 of treatment (nivolumab held for cycle 2).
### General Thoracic Surgery Database

**Neoadjuvant Therapy Module**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-L1%</td>
<td>0</td>
</tr>
<tr>
<td>Was molecular testing performed prior to initiation of therapy?</td>
<td>Yes</td>
</tr>
<tr>
<td>If so, were mutations in any of the following genes identified?</td>
<td></td>
</tr>
<tr>
<td>Select neoadjuvant therapy administered:</td>
<td>Chemotherapy + Immunotherapy</td>
</tr>
<tr>
<td>Specific Chemotherapy + Immunotherapy used</td>
<td>Nivolumab+paclitaxel+carboplatin</td>
</tr>
<tr>
<td>Number of cycles completed</td>
<td>1</td>
</tr>
<tr>
<td>Did the patient complete prescribed treatment?</td>
<td>No</td>
</tr>
<tr>
<td>Time (in days) from last treatment to surgery?</td>
<td>44</td>
</tr>
</tbody>
</table>
Open Discussion

Please use the Q&A Function.

We will answer as many questions as possible.

We encourage your feedback and want to hear from you!
Upcoming GTSD Webinars

- **New Data Manager Webinar**
  - October 25 – @ 2pmCT

- **Monthly Webinar**
  - November 8 @ 1:30CT
Contact Information

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  • 312-202-5822

Clinical Support
  • https://www.sts.org/sts-clinical-question-request-form

Helpdesk Support
  (Harvest Questions/Analysis Report Questions)
  • STSDB_helpdesk@sts.org

Database Operational Questions
  (Database Participation, Contracts, etc.)
  • STSDB@sts.org
THANK YOU FOR JOINING!