Case Study on immunotherapy reaction adverse events

• a 65 year old male with metastatic adenocarcinoma non small cell lung cancer is negative for any actionable mutations, has failed platinum chemotherapy and is PDL-1 negative.

What 2 therapies are most appropriate for this patient?

a) Pembrolizumab

b) Nivolumab

c) Docetaxel

d) Atezolizumab

e) Durvalumab

Case Study

You proceed with Nivolumab. He has received 3 cycles (6 doses). Prior to the 7th dose, he came to clinic complaining of 2 days of anorexia, nausea, one episode of vomiting and one episode of diarrhea. The temp was 101.5 degrees F, creatinine was 1.2 and he mentioned that he had dark urine.

Case Study

- Patient is admitted to the hospital. Blood and stool samples were taken. He was started on broad spectrum antibiotics and hydration. He had another diarrheal stool just after admission.
- CT scan showed no colitis but did display an ileus, and some small bowel straining. The C. Diff was positive. Stool for microscopy and cultures, Viral PCR and cryptosporidium test was negative.

Case Study

• The patient was treated for C diff with vancomycin, but the ileus did not improve, with requirement for narcotics for pain relief. The patient had 8 diarrheal BMs the next day.

- What grade diarrhea would you consider this?
- What treatment option would be started here?

a) Oral prednisolone 0.5-1 mg/kg/day max 80mg/day + PPI

b) IV Methylprednisolone 2 mg/kg/day

c) Hydrocortisone 200 mg TID + PPI

d) B or C

Case Study

- Steroids were instituted 48 hours after admission with 125 mg once IVPB.
- Patient improved rapidly, the diarrhea disappeared, and he was discharged on a 100 mg prednisone taper orally on the 5th day after admission, eating normally.
- He was better when seen a week later, and then 2 weeks later felt well.
- The steroids finished in 40 days and he returned to work as a PE instructor and coach 2 weeks after discharge, on steroids.

Case Study #2

- 61 year old male patient on Pembrolizumab. Initiated on **5/14/17**
- **10/14/17** Pt presented to ER with acute hypoxia.
- Normally, patient is able to walk for a reasonable amount of time without issue and able to perform household chores. For the last week, he reports worsening exertional shortness of breath and acute chest pain. Now, reports difficulty just walking to the bathroom.

Case Study #2

- Otherwise no major significant changes to the health, minor blood tinged sputum. has not had fevers, chills, abdominal pain, nausea or vomiting.
- In the ED, he was afebrile, satting 85% on RA, with a rate of 30, bp 119/66, HR 95
- What are the differentials?
- What imaging would you order?

Case Study

- Ddx includes progressive malignancy vs medication toxicity from pembrolizumab vs infection, vs pulmonary embolism.
- CBC, CMP unremarkable, Blood Cultures Neg, Bacterial Culture and Gram Stain negative Sputum, Respiratory Viral Panel PCR negative.
- Compared to prior chest CT, increased number of pulmonary nodules in the left lung with interval development of diffuse groundglass opacities. No pulmonary embolism. Cancer on scan felt to be relatively stable.
  - What differential are you leaning towards now?

Case Study

- Pembrolizumab toxicity felt to be most likely after evaluation by pulmonary and oncology services. Patient was placed in hfnc 15 L – once on steroids, his O2 needs decreased to 6 l nc.
- Discharged on 60 mg daily of Prednisone.
- For PCP prophylaxis - on once daily dapsone 100 mg; allergic to Sulfas.

Case Study

- **On 10/30/17**
- Reports to Oncology office visit with supplemental oxygen 2L nc and continues on prednisone 60 mg Oral Daily. He reports improvement since discharge, able to perform ADL's and takes 1-1.5 hour walks with oxygen. Improved appetite. O2 sometimes nadirs at 85% with vigorous walking.
- O2 Sat is stable at 91%.
- CT of the Chest - Groundglass opacities in the left lung have resolved. Stable disease.

Case Study

- **Recommendations from Oncology visit.** For acute hypoxia, we recommended that the patient stay on the current Prednisone 60 mg daily for now, possibly for another 2 weeks. The first task was to get him off prednisone; when to start tapering the prednisone is unclear at this time.
- He was advised to monitor his O2Sat following light chores/exercise. May consider tapering off the prednisone 60mg after continued improvements to his O2Sat (consistently above 90% without supplementation on the current dose).
- 10/31/17 Pulmonology visit: Seen by Pulmonology the next day and decided to decrease Prednisone taper to 40 mg daily.

Case Study

- **11/13/17** Office visit - 40 mg of Prednisone. Generally on ra now. O2 is 89% in clinic on ra.
- Walked 3 miles in the morning, up and down hill, on 3L O2.
- **12/28/17** we could not reduce past 30 mg of prednisone. Patient deteriorated rapidly, though pneumonitis was resolved.
- We could not re-initiate immunotherapy and patient is not a chemotherapy candidate.
- Hospice discussion.