Immune modulators as of 8-7-20

Ipilimumab (Yervoy®)
Nivolumab (Opdivo®)
Nivolumab + ipilimumab (Opdivo®+Yervoy®)
Pembrolizumab (Keytruda®)
Atezolizumab (Tecentriq®)
Blinatumomab (Blincyto®)
Talimogene laherparepvec (TVEC, Imlygic®)
Tremelimumab (CP-675,206-investigational)
Durvalumab (MEDI4736-investigational)
Pidilizumab (MDV9300-investigational)
Sipuleucel-T (Provenge®) (prostate cancer)]
Avelumab (BAVENCIO®)
Cemiplimab (LIBTAYO®)

On FDG PET, immune modulators can cause inflammation which may

- Cause existing lesions to increase in FDG uptake
- Cause existing lesions in increase in size on CT
- Cause new foci of uptake to appear
- Cause existing sites of non-tumor inflammation to increase in uptake (including sarcoid-like pattern in mediastinum and hilum)
- Cause auto-immune type inflammation in almost any organ or tissue, including:
    - Thyroid
    - Pancreas
    - Colon and/or small bowel
    - Pituitary (urgent finding)
    - Joints
    - Lungs
    - Skin
    - Prostate
    - Kidneys (rare)

If apparent metabolic progression is seen in a patient on immune modulators without definitive signs of progression on CT (e.g., new osseous destruction), please use the following phrase in the report:

"The findings indicate progressive disease. However, given that this patient is receiving immunotherapy, pseudoprogression cannot be excluded."