NANETS
NORTH AMERICAN NEUROENDOCRINE TUMOR SOCIETY

NANETS' Position Statement
COVID-19 Vaccination for NEN patients

A growing body of evidence suggests that patients with cancer have an increased risk of severe COVID-19 infection and related complications.[1] As such, NANETS supports the plan for COVID-19 vaccination for patients with neuroendocrine neoplasms (NENs), including well differentiated neuroendocrine tumors (NETs) and poorly differentiated neuroendocrine carcinomas (NECs). NEN survivors and patients with NENs on observation or undergoing cancer treatment should be offered COVID-19 vaccination as long as any components of the vaccine are not contraindicated. If vaccine supplies are limited, patients planning to start treatment, currently receiving treatment for cancer, and those immediately (<6 months) post treatment should be prioritized for COVID-19 vaccination (recognizing additional risk factors such as advanced age, co-morbidities, and other social and demographic factors such as poverty, limited access to healthcare and under-represented minorities also need to be considered).[1,2]

Oncologists have experience providing other types of vaccines to patients receiving treatment for cancer, including chemotherapy, immunotherapy, and radiation therapy.[3] While the COVID-19 vaccines are new, injectable influenza vaccines (or flu shots) are approved for use in people with cancer and other health conditions, and the flu shot has a long, established safety record in people with cancer.[4] No safety concerns are evident associated with potential use of SARS-CoV-2 vaccines in patients undergoing cancer care.[2] Somatostatin analog therapy alone is not likely to causes significant immunosuppression, but we recognize that many NEN patients experience at least some degree of immunocompromise, stemming from older age, underlying cancer, or current or recent therapy (e.g. chemotherapy, radiation, everolimus). Interim ACIP guidelines suggest that immunocompromised individuals may receive COVID-19 vaccination if they have no contraindications to vaccination, given that for most populations, the benefits are likely to outweigh the risks.[5] We acknowledge uncertainty around the extent to which immunocompromised patients with cancer will develop immunity in response to vaccination. As such, vaccinated patients should continue to follow current guidance to protect themselves from exposure to COVID-19. Caregivers and household/close contacts should be immunized when possible to reduce risk for infection or clinical COVID-19 disease, but the importance of continuing safe practices such as wearing masks, social distancing, and maintaining good hand hygiene even after vaccination cannot be overemphasized.[3-6]

Evidence-based guidance specifically for patients with NENs is lacking. Based on the available information, we recommend that patients with NENs be vaccinated when eligible according to local allocation priorities, regardless of prior or current therapy (provided they have not had an immediate or severe allergic reaction to a COVID-19 vaccine or to any of the ingredients in the vaccine).[2,3,6,7] Data to support specific timing of vaccine administration are not yet available, but we believe the following guidance is reasonable:

- Patients already receiving cytotoxic chemotherapy (e.g. capecitabine/temozolomide, carboplatin/etoposide), targeted therapy (e.g. everolimus, sunitinib), checkpoint inhibitors (e.g. atezolizumab for small cell lung cancer), or radiation (e.g. Lu177 dotatate peptide receptor radiation therapy) should be vaccinated when the vaccine is available.[2]
- In patients not yet on therapy, when possible, the vaccine should be administered before initiation of PRRT, everolimus or chemotherapy [7]

- in patients scheduled for major surgery, the vaccination should be on a separate date (at least a few days before or after) so that symptoms (e.g. fever) can be correctly attributed to surgery vs vaccination; for more complex surgeries, a wider window (+/-2 weeks) from the time of surgery may be ideal (with preoperative vaccination ideal if splenectomy planned)[2]
- Reasons for delay of vaccination are similar for the general public:
    - Patients with known COVID-19 exposure should not seek vaccination until their quarantine period has ended to avoid potentially exposing healthcare personnel and other persons to SARS-CoV-2 during the vaccination visit
    - Vaccination of persons with known current SARS-CoV-2 infection should be deferred until recovery from acute illness (if the person had symptoms) and criteria have been met for discontinuing isolation
    - Vaccination should be deferred for at least 90 days in persons who received monoclonal antibodies or convalescent plasma as part of COVID-19 treatment (pending additional data)

Additional considerations:

- According to the CDC, contraindications to the Pfizer-BioNTech and Moderna mRNA COVID-19 vaccines include:
    - Severe allergic reaction (e.g., anaphylaxis) or immediate allergic reaction after a previous dose of an mRNA COVID-19 vaccine or any of its components (including polyethylene glycol [PEG] or polysorbate)
- A history of any immediate allergic reaction to any other vaccine or injectable therapy not related to a component of mRNA COVID-19 vaccines or polysorbate is viewed as a precaution but not a contraindication to vaccination for both the Pfizer-BioNTech and Moderna COVID-19 vaccines
- Food (including eggs or gelatin), pet, venom, or environmental allergies, latex allergies, or allergies to oral medications (including the oral equivalents of injectable medications) are **not** a contraindication or precaution to vaccination with either mRNA COVID-19 vaccine.
- In the unlikely event of anaphylaxis to a COVID-19 vaccine, standard supportive therapy should be administered
    - Patients already prescribed SC octreotide for a high risk of carcinoid crisis may choose to bring this with them to the vaccination in the unlikely event that they should need epinephrine for anaphylaxis

Disclaimer: Given the rapidly changing nature of the COVID-19 pandemic, new or different information is likely to emerge after this position statement is posted. Vaccine distribution protocols are guided by numerous factors, including local, state, and federal guidelines. Patients should continue to check in with their healthcare providers and community resources. Information may change rapidly as new vaccines are approved, new shipments of vaccine arrive, and additional groups of patients are designated for vaccination. Furthermore, there remain important gaps in knowledge regarding vaccine safety and efficacy in specific patients with cancer and in those receiving specific cancer therapies. We may learn that specific therapies limit vaccine efficacy and would warrant vaccine delay, and we may learn that the. durability of vaccine protection is shortened in the setting of cancer care and a weakened immune system.[2] Check the CDC website and the sources below for updated guidance.

This statement was originally posted on the NANETS COVID-19 Resource Page on February 1, 2021.

Adapted from

1. Priority COVID-19 Vaccination for Patients with Cancer while Vaccine Supply is Limited 6
2. NCCN: Cancer and COVID-19 Vaccination v 1.0 (1/22/21) 7
3. COVID-19 Vaccine & Patients with Cancer (ASCO) 1
4. Centers for Disease Control and Prevention-COVID-19
5. Advisory Committee on Immunization Practices (ACIP) interim recommendations for the use of the Pfizer-BioNTech and Moderna COVID-19 vaccines for the prevention of coronavirus disease 2019 (COVID-19) in the United States
6. UpToDate-Coronavirus disease 2019 (COVID-19): Cancer screening, diagnosis, treatment, and posttreatment surveillance in uninfected patients during the pandemic
7. ESMO Statements for Vaccination Against COVID-19 in Patients with Cancer