YNHHS/YM guidelines for approaching front line clinical practitioners with elevated risk of contracting COVID19

Situation: Guidance is required to manage the safety of front-line clinical practitioners at elevated risk of morbidity and mortality if infected with SARS-CoV2, the virus that causes COVID-19

Background: COVID-19 poses a disproportionate risk of morbidity and mortality to individuals 70 years old and over, and those with select pre-existing conditions.

Assessment:

1. The risk of mortality posed by COVID-19 is sharply increased for those who contract the virus SARS-CoV2 in their 8th decade of life or are otherwise immunocompromised.

2. We have an obligation to our front-line clinical practitioners to mitigate undue risk.

3. There are opportunities for clinicians to meaningfully contribute to COVID19 crisis management that do not require being physically present with patients.

4. The data on elevated risk posed by COVID19 to specific populations are clear.

Recommendations for inpatient and ambulatory providers:

1. Leadership must identify practitioners 70 years old and over and speak directly to them. Leadership may also request that front-line practitioners self-identify as high risk based upon immunocompromised state or conditions with disproportionate risk for COVID.

2. Honest & direct communication with front-line practitioners is critical.

3. Practitioners aged 70 and over should be barred from direct (physically present) patient care in a ***mandatory*** fashion.

4. Practitioners with serious medical illness or immunocompromised status (abbreviated definition below) should be excluded from direct (physically present) patient care in conversation with leadership, and Occupational Health as required.

5. Those who are or may be pregnant should discuss risks with their obstetrician and leadership with regards to being in the physical presence of patients.

6. Those excluded from the physical presence of patients should be redeployed to provide patient care through telemedicine or other activities where their expertise can materially benefit the care of patients and management of the COVID19 crisis.

7. These guidelines will not adequately cover all situations and leaders have latitude to make shared decisions with their clinicians based upon unique situations that may arise.

Considerations on COVID-19 and Immunocompromise

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Immunocompromise or immunodeficiency can be divided into two groups, primary and secondary.

- Primary immunodeficiencies: severe combined immunodeficiencies, primary antibody deficiencies, and other forms of genetic disorders associated with impaired immune function.

- Secondary immunodeficiencies: acquired secondary to infections (HIV), hematopoietic malignancies, treatment with radiation, chemotherapies, and immunosuppressive drugs.

The following circumstances are some but not all examples of immunocompromise based on the Advisory Committee on Immunization Practices (ACIP) guidelines for vaccination (1) (with some modifications)

- Recombinant human immune mediators or biologics that block cytokines, immune activation molecules, or deplete cells (*e.g.,* adalimumab, infliximab, golimumab, certolizumab, etanercept, anakinra, tocilizumab, secukinumab, ixekizumab, ustekinumab, alefacept, abatacept, rituximab).
- Active leukemia, lymphoma, malignant neoplasms affecting bone marrow or lymphatics
- AIDS/HIV patients and those with CD4 lymphocyte counts <200 per mm_3
- High dose glucocorticoids > prednisone 20 mg/day for more than two weeks (dose can be disputed; in rheumatology 10 mg or lower is typically considered as low-dose glucocorticoids).
- Clinical or laboratory evidence of cellular or humoral immunodeficiency
- Hematopoietic stem cell transplantation.
- Pregnancy
- Non-biologics immunosuppressive drugs including small molecules (e.g. azathioprine, cyclosporine, tacrolimus, mycophenolate, 6-MP, high dose methotrexate (>0.4 mg/kg/week), cyclophosphamide, tofacitinib, baricitinib, upadacitinip).

What is the impact of immunosuppressive drugs on the risk of infection or poor outcomes with COVID-19?

- It may or maybe not increase the risk of infection or adversely affect outcomes. The morbidity of COVID-19 appears be largely related to excessive immune activation, inflammation, and sepsis (2). Some biologics like TNF-α blockers may lower risk of sepsis or death at the time of infection (2, 3). Of interest, a recent comment published in *The Lancet Infectious Diseases* suggests the possible antiviral effect of the Jak inhibitor baricitinib in COVID-19 by suppressing clathrin-mediated endocytosis and a combination of this drug with other direct antiviral agents (lopinavir or ritonavir and remdesivir) for COVID-19, which could reduce viral infection, replication, and dysregulated host inflammation (4). Also, in China, the IL-6 receptor blocker tocilizumab has been approved for COVID-19-infected patients with severe complications, and a clinical trial has been initiated (5). Thus, some immunosuppressive drugs such as tocilizumab and baricitinib with anti-inflammatory properties may be clinically beneficial in selected cases of COVID-19 while others may increase the risk of infection or adverse outcomes.

- It should nevertheless be emphasized that in a multivariate model of COVID-19 hospitalized subjects, advanced age was the primary risk factor for mortality among cases, irrespective of comorbidities such as hypertension, diabetes, COPD, and others (6).

References

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