EPIDEMIOLOGY
› Lung cancer patients likely are more vulnerable representing 25-58% of cancer pts in small descriptive studies1-3
› Infection rate, at one institution, of SARS-COV-2 in oncology patients 0.79% vs general population 0.39%2

TRANSMISSION
› Via respiratory droplets in the air or on surfaces, potentially fecal oral route4-6
› Median incubation period 5 days
› Asymptomatic/mildly symptomatic patients can have high viral load and shed for up to 3 weeks.5-10

DIAGNOSIS
› Hubei province standard: history + symptoms (i.e. lower respiratory tract symptoms, fever) + radiographic evidence or RT-PCR/NGS8
› CT findings are highly sensitive, but not highly specific ➔ bilateral GGO most common
› For patients with pneumonitis – remain vigilant for COVID-19, consider retesting patients
› Prelim data from Stanford suggest 22% co infection rate with other respiratory viruses

CLINICAL SYNDROMES
› Fever, cough, myalgia, fatigue, SOB persist most common symptoms
› Anosmia can be an early symptom as can sore throat
› In severe patients, acute hypoxic respiratory failure can develop rapidly, low threshold for intubation (avoid nebulizers, HFNC, BiPAP/CPAP to prevent aerosolization)
› Older pts more likely to present with SOB, higher fevers, more severe lab/imaging findings, and are more likely to develop severe/critical disease such as ARDS requiring ICU admission11
› Potential for clinical deterioration in second week12, median time between first symptoms to ARDS in 1 study was 8 days.
› 10-25% of hospitalized patients have been reported to require ventilator support13
› Cancer patients have more severe events (39-54%) and deteriorate more rapidly1,3
› Mortality 28.5% in one study3, case fatality rate 5.6% vs. 2.3% in the general population14
› Patients with more advanced cancer are more likely to have severe disease3
› Patchy consolidation on CT on admission associated with increased risk of severe events (HR=5.438)3
› Recent treatment (within 14 days) associated w/ development of severe events (HR=4.079)3
› Case fatality remains high for the elderly ➔ overall 2.3%, 70-79 yo 8.0%, older than 80 14.8%5

LESSONS FROM MERS15
› 19 patients with cancer during the MERS epidemic
› 80% needed ICU care
› 81% ARDS, 69% intubated, 56% had renal injury of which 19% required dialysis
› 84% fatality rate, 100% of those with hematologic malignancies and advanced cancer, vs. 39% in the general population
KEY TREATMENTS BEING INVESTIGATED (JUST A TASTE)\textsuperscript{16}

\begin{itemize}
  \item Remdesivir $\mapsto$ targets viral RNA dependent RNA polymerase, available for compassionate use by Giliad
  \item Convalescent plasma $\mapsto$ passive immunity, FDA announced that it can be collected and used in emergency situations fill out form 3926 and email CBER_eIND_Covid-19@FDA.HHS.gov (4-8 hr turn around)\textsuperscript{17}
  \item Chloroquine and hydroxychloroquine $\mapsto$ RCT of hydroxychloroquine (30 pts) demonstrated no clinical benefit\textsuperscript{18}, open label trial showed more rapid resolution of viral shedding in nasopharyngeal swabs in patients with hydroxychloroquine (viral clearance enhanced for 6 pts also treated with azithromycin)\textsuperscript{19}, safety/dosing studies needed
  \item Lopinavir-ritonavir $\mapsto$ Negative RCT\textsuperscript{20}
  \item Tocilizumab $\mapsto$ potent IL6 inhibitor, under investigation for use in severe patients
  \item Reports indicate NSAID use is associated with severe disease $\mapsto$ research on going, avoid if possible\textsuperscript{21}
  \item ACEi/ARBs concern for up regulating ACE2 receptor $\mapsto$ research on going, recommended to continue for now\textsuperscript{22}
  \item Concern corticosteroids prolong viral shedding $\mapsto$ recommend to avoid if possible\textsuperscript{23}
\end{itemize}

THEMES FROM AVAILABLE GUIDELINES/EXPERT ADVICE\textsuperscript{24–34}:

\begin{itemize}
  \item Prevention $\mapsto$ PPE, min. exposures, hand hygiene, separating cancer patients from COVID19/PUI patients, screening patients/providers frequently for symptoms, utilizing homecare/telemedicine when possible, t/c PPE for cancer pts
  \item Anticipation $\mapsto$ discuss prognosis with patients and families, clearly document in EMR prognosis and goals of care (DNR/DNI status), have up to date medical power of attorney information and family contact numbers, have multiple lines of “jeopardy” to fill in for provider shortages, have a plan for patient transportation within or between hospitals, plan for PPE shortages, designate “COVID free” sections in clinics/hospital wards, plans for how to manage oncology patients with COVID19 not sick enough to come into the hospital
  \item Minimizing harm $\mapsto$ aggressive use of growth factor, considering oral regimens/spacing regimens/2-4 week treatment holds for high risk patients, aggressive symptom management to keep people at home, consider liquid biopsies
  \item Cancer care $\mapsto$ essential to continue cancer care especially for curative, young patients, or those who will rapidly deteriorate without care
  \item Communication frequent conversations with patients/families especially those hospitalized who can’t have visitors, honest messaging to inpatient teams about prognosis
  \item Emotional support $\mapsto$ plans to relieve providers and administrators, culture of support, need to support patients
\end{itemize}

GUIDELINES/WEBSITES (SEE CITATION PAGE FOR MORE LITERATURE/REFERENCES)

\begin{itemize}
  \item Excellent overview aimed for internists ACP
  \item NICE guidelines including recommendations for prioritizing cancer patients for treatment NICE
  \item IDSA guidelines including an excellent page rating evidence of proposed COVID19 treatment IDSA
  \item American College of Surgeons triage recommendations ACS
  \item Recommendations and prioritization of treatment/triage of breast cancer patients American Society of Breast Surgeons
  \item ASCO, NCCN, ASH
\end{itemize}
WORK CITED


28. Lordick F: Should Cancer Treatment Be Continued During The Pandemic ➤ A Case-By-Case Discussion is Required. ESMO Soc News, 2020


