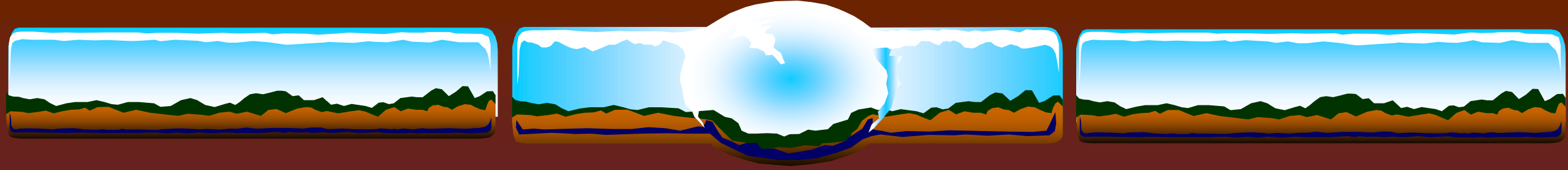
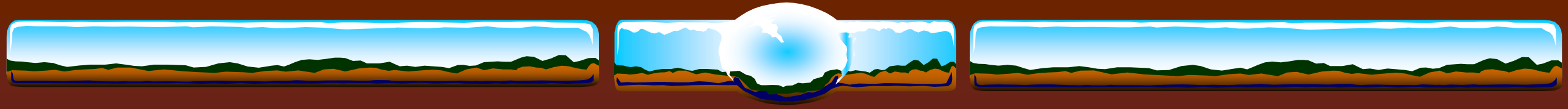


COVID-19 Clinical Update

Jonathan Vilasier Iralu, MD, FACP

Indian Health Service Chief Clinical Consultant
for Infectious Diseases



Disclosures

Virology
SARS-CoV-2 Variants

- New New York Variant: B.1.526.
  - Contains resistance mutation E484K which attenuates neutralization by antibodies
  - Appeared in late November 2020 in New York
  - Accounted for 25% of cases in New York in February 2021
  - 12.3% rise in incidence noted in diverse neighborhoods in NYC 2/2021
  - Affected mostly older patients who had higher hospitalization rates

- https://www.biorxiv.org/content/10.1101/2021.02.14.431043v2
- https://www.medrxiv.org/content/10.1101/2021.02.23.21252259v1

Diagnosis
Racial Bias in Pulse Oximetry

- Sjoding et al, NEJM:
  - Adult inpatients from U Michigan Hospital and 178 hospitals from 2014 - 2015, N = 10789
  - Looked for occult hypoxemia: ABG O2 Saturation < 88% despite pulse ox 92-96%
  - Adjusted analysis:
    - ABG Sat was < 88% in 11.4% of Black patients c/w 3.6% of White patients
  - Conclusion: Black patients had nearly 3 x the frequency of occult hypoxemia c/white patients

https://www.nejm.org/doi/full/10.1056/NEJMc2029240

Clinical Presentation
Recurrent COVID-19

- Cavanaugh et al, MMWR , 2/26/2021
- Kentucky SNF in July 2020 had an outbreak of COVID-19
  - 20 of 115 residents and 5 of 143 staff caught COVID-19
- Second outbreak October 30, 2020
  - 85 of 114 residents (76%)and 43 of 146 staff tested positive
  - Five of the residents had recurrent COVID-19 (4 women)
    - All had 3 underlying health conditions; none were immunosuppressed
    - All were symptomatic with the second outbreak

Clinical Presentation
Prolonged Acute Sequelae of COVID-19

- Louge et al, JAMA network open, 2/19/2021
- Longitudinal prospective cohort study at U of Washington
- 177 of 234 eligible participants completed a follow-up questionnaire 3-9 months after acute COVID-19
  - 6.2% had been asymptomatic, 84.7& outpatients, 9% hospitalized
  - 32.7% of outpatients and 43.3% of inpatients had symptoms:
    - Fatigue (13.6%) and loss of smell (13.6%)most common
    - 2.3% had brain fog and 7.9% had trouble with ADLS (household chores)

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2776560

Treatment
NIH COVID-19 Rx Guideline: Bamlanivimab/Etesevimab

- Bamlanivimab 700 mg plus Etesevimab 1400 mg for outpatients with mild to moderate COVID-19 (BIIa)
- Not for inpatients unless hospitalized for non-COVID illness
- Give to highest risk:
  - Age > 18: Age ≥ 65, BMI ≥ 35, CKD, DM, Immuno-compromised/suppressed, and Age ≥55 CVD, HTN or COPD
  - Age 12-17: BMI ≥ 85th%ile ,SCD, CHD, CP, device dependent, asthma
- Don't withhold in pregnancy

https://www.covid19treatmentguidelines.nih.gov/statement-on-bamlanivimab-plus-etesevimab-eua/

Treatment

Tocilizumab added to IDSA guidelines

- **Recommendation 7: Among hospitalized adults with progressive severe* or critical** COVID-19 who have elevated markers [CRP ≥ 75] of systemic inflammation, the IDSA guideline panel suggests tocilizumab in addition to standard of care (i.e., steroids) rather than standard of care alone. (*Conditional recommendation, Low certainty of evidence*)**

https://www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/

Treatment

Tocilizumab added to IDSA guidelines

- REMAP-CAP trial (https://www.nejm.org/doi/full/10.1056/NEJMoa2100433?query=pfw&jwd=000000870363&jspc=ID):
  - Gave tocilizumab to 352 pts, sarilumab to 48 pts, and placebo to 402 pts
  - OR > 1 represented improved survival, more organ support free days or both
  - Median adjusted cumulative OR was 1.64 for Toci and 1.76 for Sari
  - Hazard ratio for survival for both was 1.61
- COVACTA trial (https://www.nejm.org/doi/full/10.1056/NEJMoa2030340)
  - 438 severe covid received Toci and 144 received placebo
  - No improvement in mortality or clinical status noted at 28 days

Prevention
Pfizer-BioN Tech Vaccine

- Israeli roll out of Pfizer BNT162b2 vaccine by Dagan et al
  - Gave 596,618 vaccine and compared with controls at 1:1 ratio
  - Looked at effectiveness (1-RR) at day 14-20 after dose 1 and after day 7 after dose 2

Dose	Documented Infection	Symptomatic COVID	Hospitalization	Severe COVID-19	Death
First	46%	57%	74%	62%	72%
Second	92%	94%	97%	92%	Not available

https://www.nejm.org/doi/10.1056/NEJMoa2101765

Prevention
Johnson and Johnson Vaccine

- Single dose vaccine: Ad26.COV2.S
  - Replication-incompetent adenovirus-vectored vaccine coding spike protein
  - Tested in 40,000 participant trial
  - Protection against moderate to severe/critical COVID-19 was 67% at day 14
  - Protection against severe/critical COVID 19 at day 28 was 85%
  - No COVID-19 hospitalizations after day 28, no deaths in any recipient
  - Side effects: Site pain, HA, fatigue, myalgia
    - https://www.fda.gov/media/146304/download

More COVID-19 Training

- CDC: https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html
- ACP Physician Handbook: https://www.acponline.org/clinical-information/clinical-resources-products/coronavirus-disease-2019-covid-19-information-for-internists
- UW Protocols: https://covid-19.uwmedicine.org/Pages/default.aspx
  - UW IDEA Program: https://covid.idea.medicine.uw.edu/
  - NIH Guidelines: https://covid19treatmentguidelines.nih.gov/
- Brigham and Women's Hospital: covidprotocols.org