



# COVID-19 Clinical Care

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# Disclosures

❖ Nothing to disclose



# Transmission update

- ❖ **Pre-symptomatic Transmission of SARS-CoV-2: Singapore** MMWR 4/1/2020
  - ❖ 243 patients with COVID-19 diagnosed
  - ❖ 7 COVID-19 clusters involved pre-symptomatic transmission
  - ❖ **Transmission occurred 1-3 days before symptoms in the source patient**

*Presymptomatic transmission happens.*



# Testing update

- ❖ Preferred test is now the naso-pharyngeal swab PCR assay
  - ❖ IHS Duct Tape Solution: Use normal saline in a screw top plastic tube instead of VTM
- ❖ Cepheid Xpert nucleic acid amplification assay
  - ❖ Good for IHS Service Units that already have this platform in place
- ❖ **Abbott ID NOW COVID-19 test** is now EUA approved by FDA
  - ❖ Small desk top machine as big as a toaster
  - ❖ 5 minute turnaround
  - ❖ Might be good for SUs that don't have a Cepheid device



# Prevalence of Underlying Health Conditions

## MMWR 3/31/2020

- ❖ By March 28,2020 122,653 patient with COVID-19 were reported to CDC
- ❖ **All Comers:** 37% had underlying disease
  - ❖ DM 10.9%
  - ❖ Chronic Lung Disease 9.2%
  - ❖ Cardiovascular Disease 9%
- ❖ **Hospitalized patients**
  - ❖ 78% of ICU patients & 71% of non ICU patients had underlying conditions
- ❖ **Deaths**
  - ❖ 94% had at least one underlying condition



# COVID-19 GI Manifestations

- ❖ “Don’t Overlook Digestive symptoms” Luo et al, Clin Gastro Hep, 3/18/2020
  - ❖ 1141 confirmed COVID-19 patients seen at Zhongnan Hospital (Wuhan U)
  - ❖ 183 (16%) had GI symptoms
    - ❖ Diarrhea 37%
    - ❖ Abdominal Pain 25%
    - ❖ Nausea 73%
    - ❖ Vomiting 65%
    - ❖ Abnormal Chest Imaging 96%
  - ❖ ACE2 receptors in the esophagus, ileum and colon are possible portals



# COVID-19 and RAAS inhibitors (ACEs and ARBs)

Vadugnathan et al, NEJM 3/30/2020

- ❖ Angiotensin Converting Enzyme 2 (ACE2) counters RAAS activation
- ❖ ACE2 is also the receptor for SARS-CoV-2
- ❖ ACEIs and ARBs may increase ACE2 expression → Good or Bad???
- ❖ Clinical significance in humans is unknown
- ❖ Trials underway with ARB safety in COVID-19
- ❖ Stopping ACEI and ARB inhibitors could be risky in cardiac patients

*Bottom line: The authors recommend continuing ACEIs and ARBs*



# Cardiac manifestations of COVID-19

- ❖ COVID-19 Cardiac Injury and Mortality (Shi et al, JAMA Cardiol, 3/25/2020)
  - ❖ 416 patients with COVID-19 at Renmin Hospital (Wuhan U)
  - ❖ Median age 64 yo, 50.7% Female
  - ❖ 82 (19.7%) had cardiac injury (hs-Troponin > 99<sup>th</sup> %-ile)
    - ❖ Older with median age 74 yrs
    - ❖ Hypertension prominent in 59%
  - ❖ 22% required intubation
  - ❖ Death rate 51% with myocardial injury vs 4.5% without





# Cancer patients and COVID-19

- ❖ **COVID-19 risk in patients with Cancer** Yu et al Jama Onc 3/25/2020
  - ❖ 1524 admitted to oncology hospital in Wuhan
  - ❖ COVID-19 infection risk was **0.79%** (12 patients)
  - ❖ Median age was 78 years
  - ❖ **Non small cell lung cancer and age over 60 years were the biggest risk factors for COVID-19 in the oncology patient population**



# COVID-19 Treatment

- ❖ Experimental drugs:

- ❖ Remdesivir

- ❖ 3 controlled trials in progress for moderate to severe disease (sat < 94%)
    - ❖ Compassionate use program closed down last week

- ❖ Hydroxychloroquine

- ❖ Patiently awaiting published trials!
    - ❖ **MGH/BWH regimen:** 400 mg bid for one day then 200 mg po bid for four days
    - ❖ Monitor QTc



# COVID-19 Treatment

## Convalescent plasma transfusion Shen et al, JAMA Prelim Com, 3/27/2020

- ❖ Case series of 5 patients with COVID-19 and ARDS
  - ❖ **Criteria:** Severe pneumonia, persistent viral load, ARDS,  $PAO_2/FIO_2 < 300$ , intubated
  - ❖ **Results** from 5 patients, 2 female, all on antivirals and methylprednisolone
    - ❖ Body temperature normalized in 3 days in 4 of the 5 patients
    - ❖ SOFA scores decreased
    - ❖  $PaO_2/FiO_2$  rose within 12 days
    - ❖ Viral loads became negative within 12 days
    - ❖ ARDS resolved at 12 days in 4 patients
    - ❖ **3 discharged** home and **2 in stable condition** 37 days after transfusion



# 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>
- ❖ **U of Washington:** <https://covid-19.uwmedicine.org/Pages/default.aspx>
- ❖ **Brigham and Women's Hospital:** [covidprotocols.org](https://covidprotocols.org)

