WELCOME to the

Learning Together About COVID-19

Session will start in less than 15 minutes
Conflict of Interest Disclosure Statement

No Conflicts of Interest
Update on Testing
Diagnosing Acute Infection

- Most patients have high viral loads early in illness, viral load then declines
  - Detected by RT-PCR of NP swab
- PCR may detect viral RNA for weeks in severely ill patients
- Cultures of respiratory secretions in patients with mild illness become negative after 8 days.
  - Wolfel et al. Nature April 2020
- Rare patients may have negative NP/OP swab RT-PCR tests
  - Winichakoon et al. Journal of Clinical Microbiology May 2020
  - Long et al. European journal of Radiology May 2020
Diagnosing Acute Infection: NH

• NH HAN 4/14/20:
  • “As previously recommended, healthcare providers can and should test whomever they deem appropriate based on their clinical judgement taking into account a patient’s signs/symptoms, vulnerability, risk of having exposed others…”

• NH HAN 4/29/20:
  • 5 testing NHPHL testing sites open 7 days/week from 11am-7pm
    • Lancaster
    • Plymouth
    • Tamworth
    • Claremont
    • Rochester
Diagnosing Acute Infection: VT

• Vermont Public Health Response encourages:
  • Testing for any adult who is showing symptoms of COVID-19.
  • Testing symptomatic children... even if symptoms are mild.
• Collect specimens at centralized testing sites, hospitals, etc.
• Samples submitted to UVMMC for prioritization
Current Recommendations for Use of SARS-CoV-2 Serologic Testing

• Overall consensus among organizations: WHO, ASM, IDSA, FDA, etc.

• Recommended use for:
  • Identification of individuals previously infected with SARS-CoV-2
    • Epidemiology and seroprevalence studies
    • Facilitating contact tracing
  • Identification of potential convalescent plasma donors
  • Evaluation of immune response to candidate vaccines
  • *Potential* aid for the diagnosis of COVID-19 in RT-PCR negative patients who present later during disease course

Theel et al. Journal of Clinical Microbiology 2020
Current Recommendations for Use of SARS-CoV-2 Serologic Testing

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• Recommendations against using to:
  • Diagnose acute/recent COVID-19
  • Determine whether or not a patient has developed protective immunity
  • Guide PPE use
Myth:
Zinc
Hi dose iv vit c

- Beneficial effects of vit c in sepsis and septic shock->immunosuppressive effects (nutrients, 1/22/20)
- High doses of oral vit c ? Protect against common cold
- ? Evidence that hi dose iv vitc can shorten icu stay in patients with influenza
- Used in china mod to severe covid-19 patients ? Successfully
- Doses of 10-20g/day are safe, no major adverse events
- No well designed clinical studies
EVMC Cocktails

- EVMC recommending cocktails of the following:
  - VIT C and Quercetin
    - Quercetin a natural pigment found in colorful fruits and vegetables
    - Antioxidant, protects from free radical damage
  - Zinc, 75-100 mg/day
  - Melatonin 6-12 mg at night
  - Vit D3 1000-4000iu.day and Vit D3, +/- corticosteroids (depending on severity of illness) in addition to traditional treatment
  - In addition to standard treatment
What about Zinc?

- Reduce the intensity of covid-19 infection
- Basis is effect of zinc supplementation against rhinovirus
- SARs coronavirus replication inhibited by zinc (in vitro)
- Influenza virus replication reduced in vitro by zinc
- Amount of zinc in oral and nasal mucosa +ly correlates with reduction of cold duration
- 25-50 mg zinc/day, safe
What’s the theory behind the use of zinc?

- Maybe elderly have zinc deficiency
- Deficiency causes
  - Reduced lymphocyte counts
  - Compromised b cell deficiency
  - Low IgG
- No clinical trials
Myth: Garlic
Protective effect of garlic?

- *Allium sativum* (garlic) extract
  - For centuries, used as a traditional remedy for most health-related disorders.
  - Main active ingredient is allicin.
    - Proven to be effective against a plethora of gram-positive, gram-negative, and acid-fast bacteria.
    - Very little work has been done to investigate its antiviral properties. A few studies have reported that garlic extract showed *in vitro* activity against influenza A and B, CMV, rhinovirus, HIV, HSV1 and 2, and rotavirus.
  - There are insufficient data on the effects of garlic in preventing or treating the common cold. A single trial suggested that garlic may prevent occurrences of the common cold, but based on poor quality evidence.
Protective effect of garlic?

• Statement from WHO: “Garlic is a healthy food that may have some antimicrobial properties. However, there is no evidence from the current outbreak that eating garlic has protected people from the new coronavirus.”

• Eating a lot of garlic may be of benefit by keeping people who are infected away from you.
Myth: Estrogen
Protective effect of estrogen?

• Numerous epidemiologic studies have shown higher rates of mortality among men. Equal incidence of infection, but men are significantly more likely to suffer severe effects of the disease and die.
  - Chinese CDC placed COVID-19’s case fatality rate for men more than a percentage point higher than for women: 2.8% versus 1.7%.
  - 70% of all COVID-related deaths worldwide have been male.
Protective effect of estrogen?

• Direct effect of hormones?
  • Older women who have gone through menopause are still surviving at higher rates than men their age.
  • Some genes on the X chromosome contribute to immunity. Studies have long shown that women generally have stronger immune responses than men.
Protective effect of estrogen?

- Confounding effects of other factors:
  - Smoking, willingness to see a doctor, mask-wearing, washing hands
- Testes have high levels of ACE2 receptors; may contribute to slower clearance of the virus.
- Sex-specific inflammatory responses, including relatively higher levels of angiotensin converting enzyme 2 (ACE2) in men.
Myth: 
Sex Hormones
Protective effect of sex hormones?

• Two clinical studies
  • Stony Brook, NY. Treating COVID-19 patients with estrogen; men and women over 55, 110 patients, randomized, open-label.
    • Half get estradiol patch for one week, the others serve as control group.
    • f/u days 1, 7, 14, 28 for symptoms and outcomes
  • Cedars-Sinai, Los Angeles. Progesterone, to men only; two shots a day for 5 days.
    • b/o anti-inflammatory properties of progesterone.
    • Hope is progesterone will block the harmful overreaction of the immune system (cytokine storm),
Resources: