Episode 165: COVID with Drs. Scott, Cereda and Nacoti

On this episode: Dr. Jed Wolpaw and Drs. Scott, Cereda, and Nacoti

In this 165th episode I welcome Drs. Scott and Cereda from University of Pennsylvania and Dr. Nacoti from Italy to talk about COVID-19, what it is, what we know about it, what it's like on the ground in Italy right now, and what we can learn from their experience to try to prevent it from happening here.

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FYI information is constantly changing. Be diligent and check local guidelines and protocol.

Review of COVID nomenclature

Starting at 2:06:

- **Corona**virus identified by crown
- **-19** because identified in 2019
- Associated with SARS 2002-2004, MIRS 2012
- Discovered in Wuhan
- 140 countries reported 160,000 cases – largely in China, Korea, Italy

Presentation

4:37:

- Can be asymptomatic but spreads very rapidly
- Containment is key
    - Social isolation
    - Self-quarantine

7:17:

- Ranging from mild respiratory symptoms to ARDS
- GI and myocardial effects
- Acute kidney Injury

Testing-Kits

5:49:

- We don't have it in the US
- Other countries, such as South Korea, implemented drive through and PCR testing
- Why don't we have it here? (6:28)
    - Not available and insufficient quantity

Who's getting this?

8:29:

- Young do well.
- More severe in patients
    - older than 70 years of age
    - Comorbidities in heart, lungs, kidney, smokers
- Seattle and Washington State
- New York

What's the spread?

10:01:

- Like other countries – appears to be exponential
    - possibly from fecal spread
    - question of reinfection
- Containment is only way to reduce end point – doubles every 4 days

Transmission

12:12:

- On many types of surface found to live up to many hours up to a day or two
    - thus **hygiene, isolation and containment**

Prevention

13:07:

- Limit contact as much as possible
    - Close public spaces
    - Stop large gatherings
    - Stop unnecessary contact and meeting of people

Doing anything differently to protect family?

14:53:

- Frequent handwashing/sanitizing
- Careful face touching, changing clothes
- Be paranoid!
- From observation, Philadelphia doomed because similar to Spanish flu, the Philadelphians are not taking this seriously. There are kids bar hopping.. The Flower Show continued in Phila..

18:05:

- Social isolation at state-wide policy
- Cohort infected patients

Experience in Italy

19:05:

- Note how the distance between Milan and Bergamo is 50km but why 3400 vs 1100 cases?
- No good epidemiological data
- Most papers speak about ICU treatment, but this should not be the case.

23:30:

- Singapore Example
- WHO made announcement in December, Singapore started checking 4 days later - 20 days after discovering the virus. Singapore papers don't mention the ICU, rather they speak more of 'public health'. This highlights the importance of public health facilities to catch the virus

29:12:

- There is a mortality list due to the virus spanning over 10 pages. This is a humanitarian crisis because infrastructure not ready
- Must understand social aspect of virus spreading
- Difference in political structure poises difficulty in containment
- If every city around you is same situation, how will economy keep up?
- Density of city associated with spread
- Mortality high because high number of patients but not lack capacity to provide intensive care

Resource allocation?

36:36:

- Strong people survive, other die. diplomatic triage
- If trauma patient arrives, no free bed because all taken by COVID
- Cannot intubate patients over 70

- Hypothetical criteria of intubation: >1 organ failure = no intubation

Mortality statistics?

40:43:

- Artificially high because cannot treat patients. Mortality is influenced by lack of treatment
- Fatality of virus is low. 10 times more contagious than SARS
- High infectivity rate destroys the health system, leaving us unable to take care of other patients.

43:07:

- In Seattle, out of 100 nursing home patients, 14 died. Overall younger patients do better, thus overall mortality rate is low. Infectivity is high

44:00:

- Morality = total # dead / total # infected
- Lot more cases than we know about thus denominator would be much higher
- Children are asymptomatic. 1% are severe. School is probably somewhere that virus diffuses a lot
- Chinese population found same viral load in asymptomatic patients as symptomatic patients. Thus, importance of public health isolation. Don't wait . do public interventions now!

What are you doing to provide in hospital?

47:29:

- Mild case can stay at home. Even 90% oxygen saturation is fine.
- Everyone was initially coming into the hospital. The ambulance driver did not have protection. Patient was an important vector. With nowhere to stay while waiting in hospital, the virus continued to spread…

Situation in the US?

53:00:

- Not the same case here.

54:35:

- Catching O2 drop in beginning, treat with oxygen and prevent propagation

55:09:

- Isolated hypoxia can do fine (eg Mount Everest). People who develop this slowly can be treated early and prevent having to come to hospital

56:36:

- Cohorting is a great idea. However, in the US there is no central coordination, even at city wide level.
- Hospitals become contaminated and infected patients overflow to city hospitals

ECMO?

59:25:

- No.. and no space either.
- Current mindframe is approaching this as a severe influenza epidemic where you worry about advanced care.
- Should actually consider this as disaster management equivalent of daily bombing that gets bigger. This scenario you don't worry about advanced care

Healthcare workers contracting COVID?

1:01:37:

- No surveillance, so unknown
- In China: 30-50% ill

1:04:00:

- Mental health is diminishing.
- PTSD

When escalating severity in hospital, what are you doing?

1:05:48

- Depends on capacity to manage patient on ventilation

1:08:41:

- Importance of early nutrition
- Patients arriving in hospital that are symptomatically hypoxic likely haven't eaten for days. and worsens severity. Thus, assess nutrition status.. and feed early

1:11:05:

- Young patients without comorbidities and are 40-50 years of age die. Hypothesize that the cause of death is MI from prolonged hypoxia

1:13:57:

- Telemedicine
- Use home care system
- Proactive measures

Lessons and recommendations?

1:14:24:

- Stop all elective surgeries and clinic activities
- Dedicated units
- Create protocols
- Start preparing now
- Think creatively about how we can deliver intensive care in different scenarios. Think about staffing, scheduling.
- Safe ways to deliver positive pressure

1:19:00:

- If patient comes in with mild chest opacities on CXR can evolve very fast, dont' wait to intubate until crashing. Trial non-invasive for 30-60min
- Concerns for infection during intubation

Advice for anesthesiologists?

1:21:00:

- Start cluster survey on personnel to find cases. Then start PPE there.
- Define high risk intubation. What do you do if respiratory failure on floor?
- Continue to screen patients.
- Assume COVID if respiratory symptoms
- Intubation:
    - Protocols
    - N95 with double glove and face shield
    - PAPPR for intubations
    - One intubating person in room

    - Broad definition for high risk but treat intubations as high risk

1:26:30:

- Social distancing. Be paranoid.

Treatments and vaccines?

1:27:39:

- Convalescent serum?
- Protocols for 2 antiretrovirals: lopinavir and ritonavir

1:29:35:

- Ethical considerations re: ritonavir and consent
- Ask your ethics committee to start drafting something!

Public summary

1:31:40:

- Prevention:
    - Closing schools, asked to stay home
- Big challenge in this country is that people don't like being told what to do. It does take self-sacrifice.
- You are putting higher risk people at risk!

Hospital summary

1:33:44:

- Cohort COVID patients
- Intubate early and safely. PPE. protocols in place!
- Early nutrition
- Who can stay home?
- Idea of two people with similar body habitus/etc. on one ventilator

1:36:00:

- Treat COVID like Ebola
- Search 'Ebola in Africa' and learn something
- Please discuss with your communities about self-quarantine, isolation. How can we keep ourselves and patient safe?

What has your experience been? Spread the word!

References

Grasselli G, Pesenti A, Cecconi M. Critical care utilization for the COVID-19 outbreak in Lombardy, Italy: early experience and forecast during an emergency response. JAMA. doi:10.1001/jama.2020.4031