

COVID-19

3/27/2020

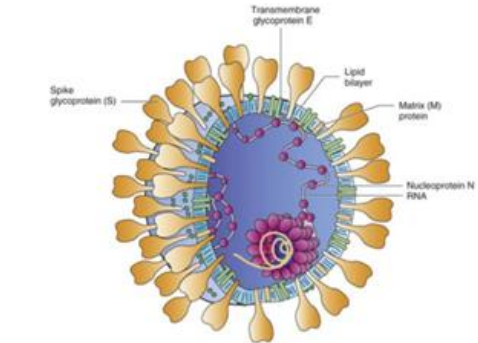
Impact on Pediatric Renal Transplantation

Abanti Chaudhuri, MD

Dec 2019

Cluster of pneumonia cases observed in China

2019-nCoV



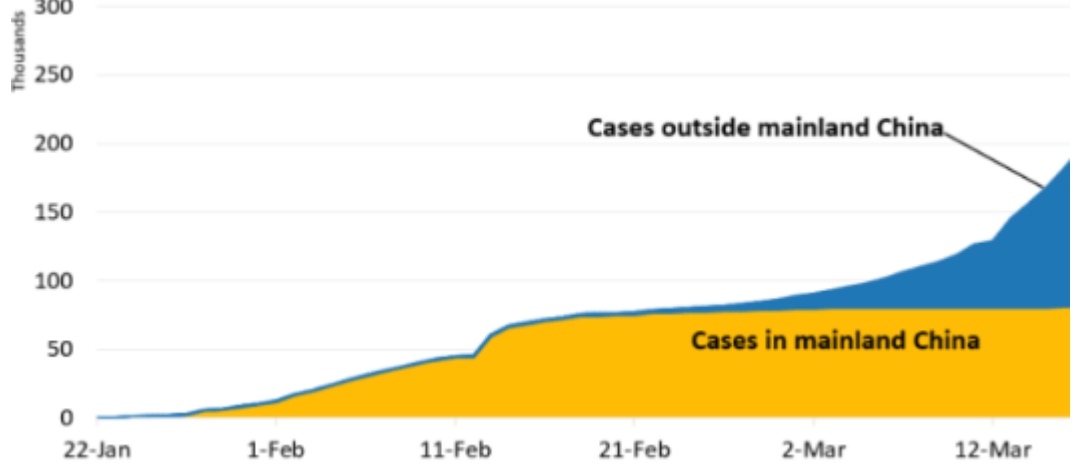
SARS-COV-2

COVID-19

COVID-19 Outside of China

Jan 2020

Confirmed cases of COVID-19 have been increasing outside China



Mar 2020

WHO declares pandemic

Coronavirus Cases:

532,263

[view by country](#)

Deaths:

24,090

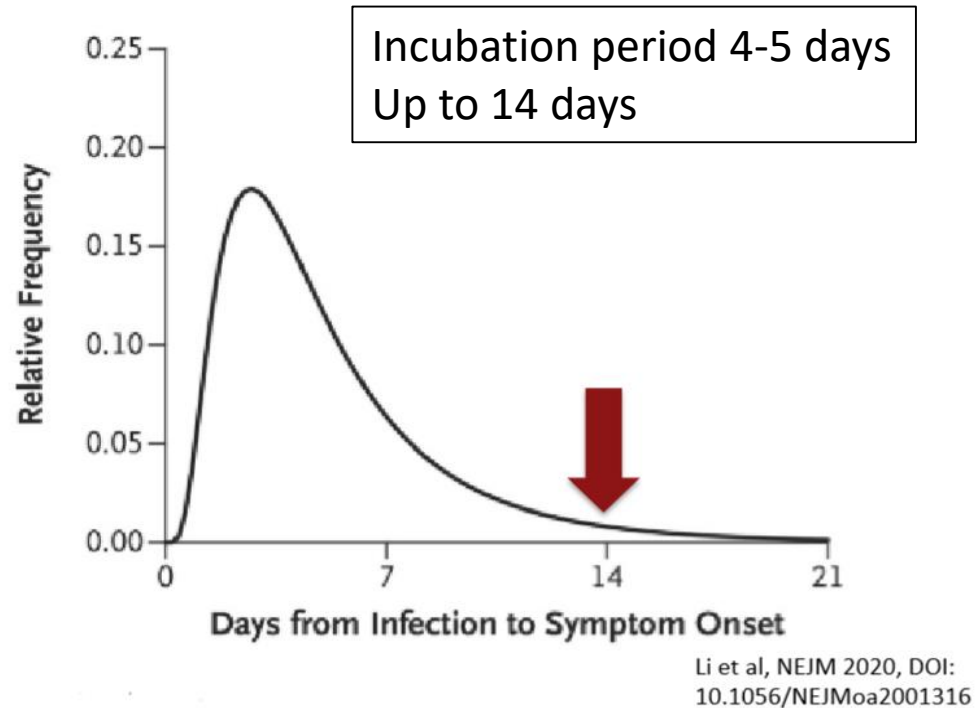


Pediatric cases in China

	Cases N (%)
0-9 years	416 (0.9)
10-19 years	549 (1.2)
20-29 years	3,619 (8.1)
30-39 years	7,600 (17.0)
40-49 years	8,571 (19.2)
50-59 years	10,008 (22.4)
60-69 years	8,583 (19.2)
70-79 years	3,918 (8.8)
≥ 80 years	1,408 (3.2)

Mortality of confirmed cases

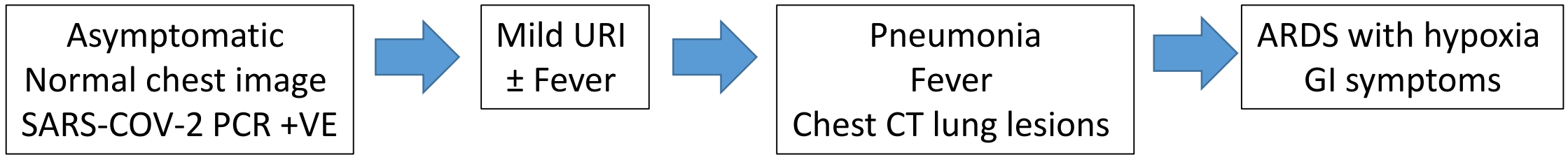
	Cases N (%)	Deaths N (%)	Case Fatality Rate (%)
Overall	44,672	1,023	2.3%
0-9 years	416 (0.9)		
10-19 years	549 (1.2)	1 (0.1)	0.2
20-29 years	3,619 (8.1)	7 (0.7)	0.2
30-39 years	7,600 (17.0)	18 (1.8)	0.2
40-49 years	8,571 (19.2)	38 (3.7)	0.4
50-59 years	10,008 (22.4)	130 (12.7)	1.3
60-69 years	8,583 (19.2)	309 (30.2)	3.6
70-79 years	3,918 (8.8)	312 (30.5)	8.0
≥ 80 years	1,408 (3.2)	208 (20.3)	14.8



Person to person spread via respiratory droplets among close contacts

Within 6 feet of a patient for a prolonged period of time.

Having direct contact with infectious secretions from a patient with COVID-19



- 36,160 cases (81%) reported mild symptoms
- 6,168 cases (13.8%) reported severe symptoms
- 2,087 cases (4.7%) critically ill
- Case fatality higher among those with comorbid conditions (2-12%) compared with those with no comorbid conditions (0.9%)

China CDC weekly report 2/17/20

SARS-CoV-2 Infection in Children

72,314 cases, < 1% in children younger than 10 years of age

HOSPITALIZED CHILDREN	Wuhan Children's	Tongi Hospitals
SARS-Cov-2 Positive	171/1391 (12.3%)	6/366 (1.6%)
Mean age	6.7 y (1 day – 15 y)	3y (1-7 y)
Fever		6/6: >39°C
Respiratory Symptoms		6/6: cough
ICU/Ventilator	3: all with comorbidity	1: previously healthy
Death	10-month-old with intussusception	0
Transplant Recipients	0	0

Detection of Covid-19 in Children in Early January 2020 in Wuhan, China
Liu et al: DOI: [10.1056/NEJMc2003717](https://doi.org/10.1056/NEJMc2003717)

SARS-CoV-2 Infection in Children
Lu et al DOI: [10.1056/NEJMc2005073](https://doi.org/10.1056/NEJMc2005073)

Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China

Dong et al, DOI: 10.1542/peds.2020-0702

- General Population: 2143 children with COVID-19
 - 34.1% with laboratory confirmed SARS-CoV-2
 - Median age 7 (IQR 2-13)
 - Younger children (infants) with more severe disease

<1 y	1-5 y	6-10 y	11-15 y	≥ 16 y
10.6%	7.3%	4.2%	4.1%	3.0%

- No transplant patients noted

90% of all patients were asymptomatic, mild, or moderate

Coronaviruses and immunosuppressed patients. The facts during the third epidemic

Lorenzo D'Antiga

Paediatric Hepatology Gastroenterology and Transplantation, Hospital Papa Giovanni XXIII Bergamo, Italy

March 14 2020

21,157 Italian subjects diagnosed with COVID-19

700 children have received a liver transplant

None developed clinical pulmonary disease, despite three testing positive for SARS-CoV-2 .

Immunosuppressed patients are not at increased risk of severe pulmonary disease compared to the general population.

Children under the age of 12 do not develop Coronavirus pneumonia, regardless of their immune status, although they get infected and can therefore spread the infection.

Risk factors for severe disease: old age, obesity and its co-morbidities and male sex.

EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS OF HEART TRANSPLANT RECIPIENTS DURING THE 2019 CORONAVIRUS OUTBREAK IN WUHAN, CHINA: A DESCRIPTIVE SURVEY REPORT

Zong-Li Ren, Rui Hu, Zhi-Wei Wang et al

JOURNAL OF HEART AND LUNG TRANSPLANTATION

single-center, retrospective study

87 Heart Tx recipients

21.3% with pre-existing lymphopenia

87.2% of recipients had therapeutic tacrolimus concentration (5-12ng/ml)

Heart Tx recipients that practiced appropriate prevention measures had a low rate of infection with SARS-CoV-2 and transition to COVID-19.

SARS-CoV-2 and organ transplantation: Lot of unknowns

- Who to test?
- Immunosuppression?
- Antiretrovirals & Immunomodulators?
- Chloroquine / Hydroxychloroquine?
- ACE inhibitors?

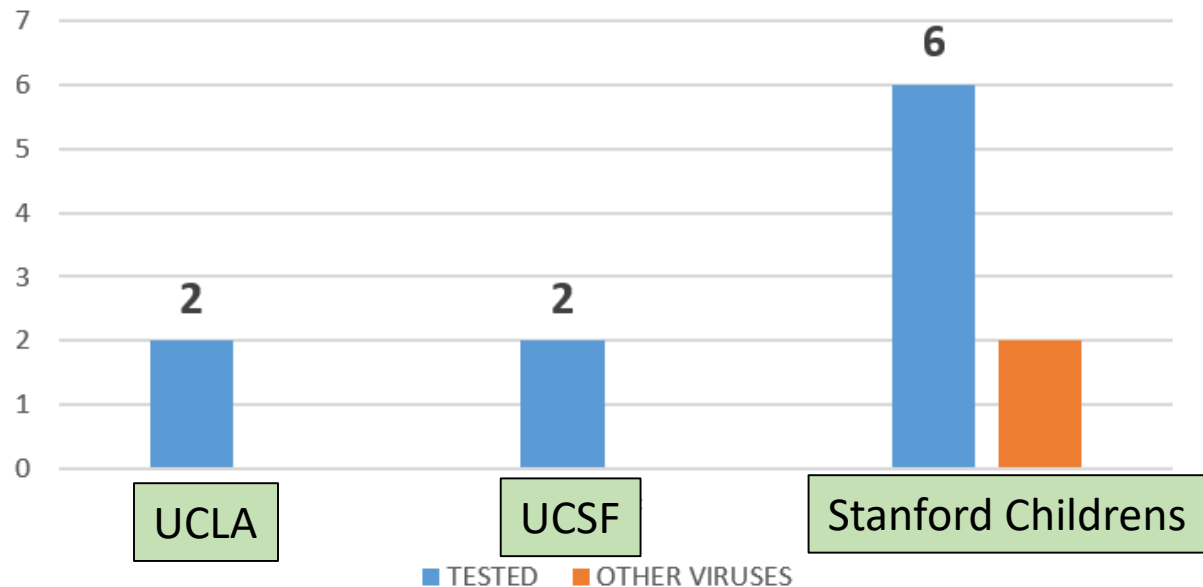
Management of patient and family concerns

- Enormous volume of calls
- Communicate with families
- UNOS: latest updates and links to the transplant society websites
- Access to medication – delivery service
- Telemedicine

COVID-19

Pediatric kidney transplant: California experience

Testing Criteria



- i. Travel outside the US in the past 14 days?
- ii. Contact with anyone with COVID in the past 14 days?
- iii. Fever in the past 24 hours (38 C/100.4 F)?
- iv. Any of the following symptoms:
 1. New cough
 2. Sore throat
 3. Shortness of breath
 4. Difficulty of breath
 5. Unexplained body aches
 6. Runny nose, nasal congestion, sneezing

Our approach to COVID19...

- provide anticipatory guidance to families provided via email and/ or US mail.
- Modification to Outpatient Clinic Visit
 - Vitals and registration are completed in exam room
 - One accompanying family member
 - From 3/13/2020, successfully converted 95% of our visits via Telehealth.

Our approach to COVID19 cont.

- Transplant personnel
 - All meetings via Webex or Zoom
 - All personnel report daily to their manager with symptom monitoring.
 - Staff were encouraged and supported in working from home.
 - Staff that does come in, they respect the social distancing in their environment.
 - Transplant psychologist provided resources for managing stress and anxiety.
 - Transplant Director provided information on coping strategies and Psychological First Aid.

Our approach to COVID19 cont.

- Tracking
 - All patients that are tested for COVID19 (n=6).
- Treatment Approach
 - Their immunosuppression is reduced with primary consideration of stopping Mycophenolate entirely as clinically indicated.
- Elective Procedures
 - All protocol biopsies, living donor transplants and other elective procedures have been cancelled at this time.
- Transplant
 - Critically evaluating deceased donor offers at this time
- Lab Monitoring
 - Decreased the frequency in monitoring routine labs for stable patient's.