

Caring for TB patients in the context of COVID-19

Joseph Burzynski, MD, MPH
Director, Bureau of Tuberculosis Control
NYC Department of Health and Mental Hygiene

END TB
NYC

RAPID CHANGES IN CLINICAL CARE AND COMMUNITY WORK

Clinical care:

- Three of our four TB clinics closed on March 23
- Appointments currently prioritizing confirmed or probable TB cases and recent contacts
- Implemented telehealth to offer phone/video evaluations and then mail medications to patients
- Conducting home visits on a case-by-case basis

Disease investigation/case management:

- Initial patient interviews are conducted over the phone
- Home assessments, home visits to test contacts, on-site testing in congregate settings are on hold
- DOT is conducted by video in almost all cases

PATIENT 1

- 62-year-old male born in the U.S.
- Diagnosed with pulmonary MDR-TB 6/14/2019
- Hx of drug & alcohol abuse, chronic smoker, hx of MAI infection (2014)
- Other medical conditions:
 - Hx of small bowel obstruction and hernia
 - Cholelithiasis
 - Hypertension
 - Chronic pancreatitis
 - Vitamin D deficiency
 - Hyperlipidemia
 - Bile duct stone

PATIENT 1

- Smear AFB positive (+4)
- *M. Tb* complex culture positive
- Whole Genome Sequencing – rpoB, katG, embB, and pncA mutations detected
 - Resistant to all first line medications
- Conventional DST – resistant to INH, RIF, EMB and PZA
- TB Treatment:
 - MDR Regimen: MOX, AMN, CYC, LNZ, Meropenem
 - Currently: MOX, CYC, LNZ
 - BDQ too risky due to prolonged QTc interval at baseline and cirrhosis
 - CLO too risky due to hx of bowel obstruction
- Started appropriate treatment 6/29/2019
- Culture converted in about two months (August 2019)

QT PROLONGATION

- Drugs used to treat TB or NTMs:
 - Bedaquiline
 - Fluoroquinolones
 - Clofazimine
 - Delamanid
 - Pretomanid
 - Macrolides
- Electrolyte abnormalities: ↓K, Ca, Mg
- Other drugs that prolong QT interval – methadone in this case
- Hx of Torsade de Pointes
- Hx of congenital prolonged QT syndrome
- Hx of hypothyroidism, bradyarrhythmias, uncompensated heart failure
- This effect can be additive

PATIENT 1

- Prolonged hospitalization for complex and unstable medical conditions; patient also had unstable housing
- Contracted COVID-19 while in the hospital, possibly from hospital roommate
- Symptoms initially mild and patient was started on hydroxychloroquine

PATIENT 2

- 61-year-old female from Nepal
- Presented to her doctor with right-sided chest pain
- Chest CT scan found a right-sided lung mass
- Biopsied during a bronchoscopy and grew *M. tb*
- 2/14: Came to Corona Clinic, started on HRZE
- 3/17: Follow-up, no major complaints. EMB d/c. Normal labs, AST 29 & ALT 34
- 3/23: Corona Clinic closed, patient assessed as appropriate for remote monitoring

PATIENT 2

- 3/31: Texted that she had nausea, vomiting, jaundice. Medications on hold. Patient advised to go to the clinic, but refused the clinic and ER due to COVID concerns.
- 4/1: Phlebotomist visit, AST 108 & ALT 244
- By this point, our program had developed a home visit policy for this type of situation.
- The policy requires that:
 - Visits be approved by senior staff
 - Staff follow recent Agency guidance for anyone entering someone's home:
 - Wear appropriate PPE
 - Call the day before and the day of to check if patient/anyone in their household has current/recent symptoms consistent with COVID-19
 - Staff should not enter the home of someone with current/recent symptoms of COVID-19

PATIENT 2

- 4/8: MD home visit, patient felt mostly better. Tibetan doctor prescribed some herbs. Now AST 81 & ALT 193.
- 4/11: Agreed to restart RE.
- 4/17: Called to say symptoms had returned, again advised stopping medications.
- 4/21: Spoke again. Patient changed her mind and continued RE.
- 4/23: Home visit again with MD and phlebotomist. Now lab normal on RE. AST 20 & ALT 31.
- 5/1: Telehealth via FaceTime

ONGOING CHALLENGES

- Videoconferencing very challenging for our patient population
 - Trying to roll this out to patients outside of a clinical environment, so very different from vDOT
- Patients fearful of going to the clinic or the ER
- Home visits are time intensive

We are still learning!

TB/COVID-19 CO-INFECTIONS IN NYC

- As of April 23, we were aware of about 15 active TB patients co-infected with COVID-19
- We are still collecting data and investigating these cases