COVID-19 CORONAVIRUS

Statement of the Lebanese Pulmonary Society, The Lebanese Society of Critical Care Medicine, The Lebanese Society of Anesthesiology

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Definition

COVID-19 is a highly transmissible viral illness of the Coronavirus family with a relatively higher mortality in older individuals and in patient with chronic disease. It has a special predilection to the lungs. In severe cases multiorgan failure can also occur and might lead to death.

Transmission

This disease is highly transmissible mostly through contact and droplets and could become airborne if nebulized.

Prevention of transmission

General recommended interventions include:

- social distancing.
- frequent and thorough hand washing for at least 20 seconds with soap.
- hand rubbing with alcohol-based solution at a 60% to 70% strength.
- frequent disinfection of high-touch surfaces.

Health care workers should wear gloves, face mask, eyeshield and a waterproof full body personal protective gown when caring for a patient with confirmed or suspected COVID-19.

Health care workers should additionally wear a N-95 mask, preferably fitted, covered by a face shield to cover the whole face and an overall suit when caring for a confirmed COVID-19 patient receiving respiratory support (high flow oxygen, non-invasive or mechanical ventilation) and during aerosol generating procedures (nebulized therapy, bronchoscopy, intubation, suction).

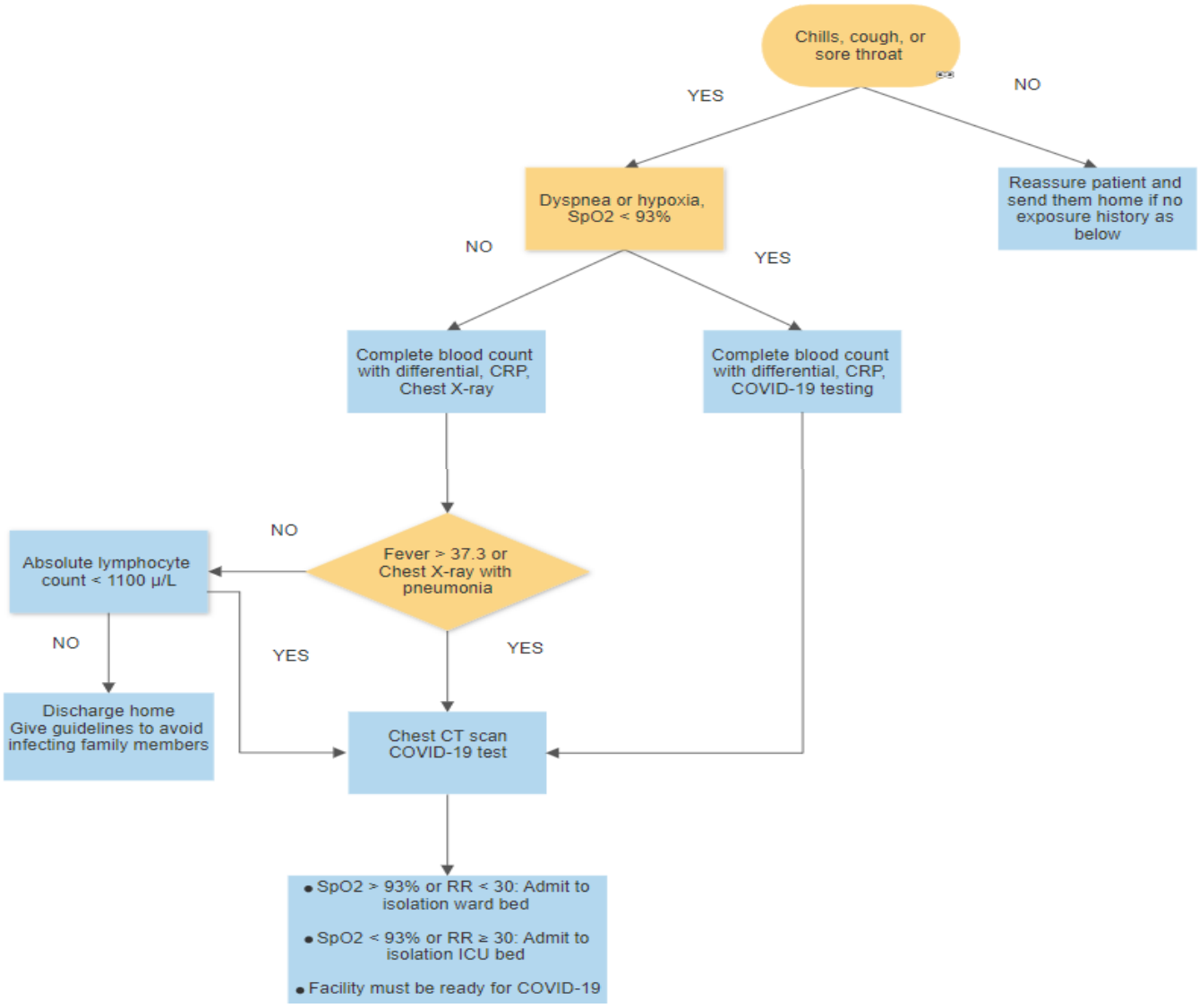
Readiness of Healthcare

Safety of healthcare personnel is paramount. Ideally, every institution caring for COVID-19 should have a dedicated section for patients with Coronavirus.

- Personnel Protective Equipment (PPE)
  - Long sleeved waterproof gown or overall suit
  - Gloves covering the sleeve
  - Mask: N 95 when performing procedures, in ICU rooms, in operating rooms, and negative pressure rooms
  - Shoe covers
  - Protective shield or goggles.

- Proper decontamination of healthcare personnel upon removing their PPE is necessary for their own safety and the safety of their loved ones.
- Ideally critical patients should be in negative pressure rooms.
- It is strongly recommended that intubation is performed in a negative pressure room.
- Intubation should be performed via Rapid Sequence method, preferably without Ambu-bagging, preferably video assisted, with maximal barrier and airborne protection.
- For severe cases, patients should be ventilated invasively to maximize their chances of recovery and minimize transmission to the surrounding.
- In case of invasive mechanical ventilation:
  - Use closed suctioning.
  - Avoid circuit interruption.
  - Avoid active humidification.
  - Use properly placed bacterial and viral filters.
- Avoid aerosolized treatments and use instead a DPI and MDI with spacer.
- Increase availability of critical care beds by restricting and postponing elective surgeries.
- Noninvasive ventilation & high flow oxygenators should be avoided and kept as last resort if invasive ventilation is no longer available; as they may increase the risk of contamination.
- As critical care beds become all occupied, the operating rooms can be used as critical care units.
- Patient transport
  - Avoid patient transport
  - Nonintubated patients should wear a mask over their oxygen delivery service.
  - All personnel should be wearing full PPE (refer to above).
  - Hallways must be cleared.
- Psychological support is strongly recommended to both patients and healthcare providers.

Proposed Protocol for Diagnosis and Triage of Suspected COVID-19 Patients



Exposure History:

- **History of travel or residence in a country with community transmission**
- **Working in close proximity or living in the same household as a COVID-19 patient**

Patients with a positive COVID-19 test and fever and cough and negative chest imaging can be discharged to home isolation if that is possible.

References:

1- **Zhang J, Zhou L, Yang Y, Peng W, Chen X. Therapeutic and triage strategies for 2019 novel coronoavirus disease in fever clinics. *Lancet Respir Med 2020;* published online Feb. 13, 2020.**
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Triage of a suspicious case

Common symptoms of COVID-19 are: sore throat, fever, cough, and shortness of breath.
Shortness of breath is a common indicator of severe disease.
A patient with know COVID-19 contact and/or with known travel to a high-risk area within the past 14 days with 2 out of 4 symptoms should be referred to a designated clinic.
In case of shortness of breath or hypoxia, the patient should be directed to a designated Coronavirus Emergency Room.

Initial Para clinical assessment lab testing

CBC, CRP, Chem 6 (basic chemistry). PCR (strongly recommended if available), chest X-ray.
A CT Scan chest should be performed when there is high suspicion despite a normal chest X-ray.

Triage of patients:

Once a suspected case is confirmed by PCR or serology for COVID-19, we propose the following classification of severity:

1. **Mild:**

Mild clinical disease with no evidence for pneumonia on radiography.

2. **Moderate:**

Fever, respiratory symptoms, and pneumonia on radiography

3. **Severe:**

Any one of the following:

- Tachypnea, RR > 30
- Room Air SaO2 < 93%
- PaO2/FiO2 < 300mmHg
- Chest X-Ray or CT Scan of Chest showing > 50% progression within 48 hours.

4. **Critical:**

Any of the following:

- Respiratory failure requiring mechanical ventilation
- Syncope
- Any other organ failure requiring care in a critical care setting

Treatment[2,8,11]

To date no pharmacologic intervention proven effective.

There is no strong evidence from randomized clinical trials for the below suggested COVID-19 therapeutic and diagnostic interventions. As such, all suggested diagnostic and therapeutic interventions in this document may be modified as new evidence emerges.

All interventions used in this document are considered investigational or for compassionate use. Decision to use any of the suggested interventions should be made while considering the patient's comorbidities, potential drug interactions, and sound medical judgement.

1) Systemic steroids: No proven benefit with potential harm. Avoid use unless indicated for another preexisting condition.
2) Non-Steroidal Anti-Inflammatory Drugs: They should be avoided in patients with COVID-19 as they may worsen the outcome.

3) Fluid sparing strategy.
4) A multidisciplinary approach to pharmacotherapy is strongly recommended involving infections disease consultants and other specialties as deemed appropriate.
5) Potential treatments that can be considered after consultation with an Infectious Diseases specialist:
    a. Remdesivir: (Captisol) +++ [6]

    Activity against Ebola, MERS, and SARS

    Highly effective in one in vitro study

    Suggested Dosing: 200mg IV x1d, then 100mg IV qD x9d

    b. Lopinavir/Ritonavir: (Kaluvia ou Kaletra)[7]

    Case Series in JAMA[7] (Published Mar 3, 2020)

    Suggested Dosing: 400-100mg PO BID x 14d

    c. Chloroquine (Nivaquine, Aralen) Anti-Malarial Medication [8,9,10,11]

    Suggested Dosing: 500mg PO BID x10d

    d. Hydroxychloroquine[6]
    Hydroxychloroquine was found to be more potent than chloroquine at inhibiting SARS-CoV-2 in vitro

    Suggested Dosing: 400mg PO BID x1d, then 200mg PO BID x4d

    a. Tocilizumab (Actemra)[8,11]

    Binds to IL-6 and blocks it from functioning

    Potentially could help in patients who develop cytokine storm (involves elevated levels of IL-6)

    Suggested Dosing: 8mg/kg in 100mL of 0.9% NS IV over 60min x1 [Link is HERE]

    e. Favipiravir:

    Suggested Dosing: 1600mg PO BID x1d, then 600mg PO BID x6d

References:

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3. https://www.ecdc.europa.eu/en/case-definition-and-european-surveillance-human-infection-novel-coronavirus-2019-ncov
4. Recommandations d'experts portant sur la prise en charge en réanimation des patients en période d'épidémie à SARS-CoV2. SRLF-SFAR-SFMU-GFRUP-SPILF
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11. Massachusetts General Hospital COVID 19 Treatment Guidance. Version1 3/17/2020
12. Interim Infection Prevention and Control Recommendations for Patients with Confirmed COVID-19 or Persons Under Investigation for COVID-19 in Healthcare Settings.
13. CDC's Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with COVID-19