



ISSN: 2091-2749 (Print)
2091-2757 (Online)

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Submitted

26 Apr 2020

Accepted

27 Apr 2020

How to cite this article

Rano Mal Piryani, Suneel
Piryani, Jay Narayan Shah.
Revisit the hospital policy in the
era of COVID-19. Journal of
Patan Academy of Health
Sciences. 2020Apr;7(1):97-100.

DOI:

<https://doi.org/10.3126/jpahs.v7i1.28883>

Revisit the hospital policy in the era of COVID-19

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Point of view

Key-points

1. Patient with recent history of dry cough, fever and breathlessness (influenza-like or severe acute respiratory illness) without alternative explanation/diagnosis needs to be managed as COVID-19 unless proved otherwise.
2. Suspected COVID-19 patient having fever and recent loss of taste and smell be tested for COVID-19.
3. Patient with severe acute respiratory illness of unknown aetiology be tested for COVID-19.
4. Patient with bilateral consolidation on chest X-ray or ground glass appearance on chest CT or interstitial oedema on chest ultrasound (not fully explained by volume overload) be tested for COVID-19 in moderate to high risk communities/countries.
5. Suspected COVID-19 patients with lymphopenia, high ESR or rise in C-reactive protein and suspected of viral fevers be tested for COVID-19.
6. Screening of pregnant women for COVID-19 with rapid testing preferably with Elisa in moderate to high risk communities/countries.
7. Screening with rapid testing preferably with Elisa prior to invasive interventions, including operations, in moderate to high risk communities/countries.
8. Limit the exposure of hospital staff who are susceptible to develop severe complications of COVID-19.
9. Hospitals provide PPE to staff depending upon exposure as per international/national/local guidelines.
10. Hospitals implement infection prevention control measures meticulously in context of COVID-19.

The COVID-19 is an acute, highly contagious infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) primarily involving respiratory system. World Health Organization (WHO) declared COVID-19 a global pandemic on 11 March 2020.¹ It is primarily transmitted through respiratory droplets. When an infected person coughs, sneezes, or talks, they can infect person/s who is/are in direct contact or within 1.5 meters. Also, infection can occur if someone touches contaminated surfaces/articles and then touches eyes, nose, or mouth.²

Clinical course ranges from asymptomatic to very mild disease, and may progress to severe disease with pneumonia and some patients become critical leading to life-threatening complications such as acute respiratory distress syndrome (ARDS), shock, and multi organ dysfunction syndrome (MODS). Around 80%, 15% and 5% of patients have mild, moderate-severe and critical disease respectively. Critical disease predominantly affects advanced-age population, and patients with comorbidities.³

The most common symptoms are fever, fatigue and dry cough; common symptoms shortness of breath (an early indicator of rapid deterioration), loss of smell (sometimes the only symptom) and/or taste, loss of appetite and myalgia; and less common symptoms diarrhea, abdominal pain, sputum production, rhinitis, sore throat, headache. The triad of fever, cough, and dyspnea is seen in around 15% patients. Majority of symptomatic patients present with pulmonary and constitutional symptoms while some may have extra-pulmonary manifestations such as encephalitis, Guillain-Barré Syndrome, diarrhea, loss of smell/taste, acute kidney injury (AKI), hepatopathy, conjunctivitis, diabetes and hyperglycemia among people without prior diabetes.⁴

White blood cell count varies from leukopenia to leukocytosis; lymphopenia is most common. Thrombocytopenia, increased lactate dehydrogenase (LDH) and ferritin are common, but aminotransferase are also elevated.⁵

Chest radiographs may be normal in early-stage or in mild disease; common findings are consolidation and ground glass opacities, with bilateral, peripheral, and lower zone distributions. Interstitial edema is detected on chest ultrasound. The most common CT scan findings are ground-glass opacification with or without consolidation; findings consistent with viral pneumonia.⁵

Laboratory features associated with worse outcome are lymphopenia, elevated liver enzymes, LDH, C-reactive protein (CRP),

ferritin, erythrocyte sedimentation rate (ESR), D-dimer (>1mcg/mL), prothrombin time (PT), troponin, creatine phosphokinase (CPK), and creatinine).⁶

There is no specific therapy recommended for COVID-19, and no vaccine is currently available. But different drugs in various combinations have been used in different hospitals in different countries. Management consists of supportive care. Home management is more appropriate for patients having mild disease, and adequately isolated outpatient setting. A minority of patients need critical care including mechanical ventilation. For moderate-severe cases indoor hospital care and possibly intensive care management including oxygen therapy is required.⁷

Currently, therapeutic strategies to deal with COVID-19 are only supportive and prevention aimed at reducing transmission in community (physical distancing, good health hygiene practices including respiratory hygiene, hand washing, protecting eyes), testing suspects, isolating confirmed cases and quarantining contacts. Furthermore, peoples have to avoid crowds and limit contacts. Physical distancing is advocated in locations where community transmission is highly likely and use of face masks are advised in public.⁸

The COVID-19 is confirmed with real-time polymerase-chain-reaction (RT-PCR) and patients are declared as recovered after two consecutive RT-PCR tests become negative. There are reports of positive RT-PCR in some patients previously declared recovered. It's not known whether they got re-infected or there is reactivation of the virus. At least 110 people in South Korea tested positive for COVID-19 after having been thought to be completely recovered.⁹

Use of universal COVID-19 testing in pregnant women presenting for delivery revealed that currently, in the pandemic New York City, most patients who tested positive had no symptoms.¹⁰

There is community transmission in most countries. The possibility of second wave of transmission cannot be ruled out at this point-in-time. Singapore's coronavirus caseload increased over two-fold in past few days, with more than 8,000 confirmed cases as of April 20, 2020.¹¹

The WHO recommends that standard, contact, and droplet precautions (gown, gloves, medical mask and eye protection with goggle or face shield) be used for all personnel entering room of a patient with suspected or confirmed COVID-19. Healthcare workers are first line warriors and are at extremely high risk of contracting the infection. Thousands of healthcare workers contracted COVID-19 infection and many of them lost their lives. Without secure supply-chains of personal protective equipment (PPE), risk to healthcare workers around the world is real. Ability to care for suspected or confirmed COVID-19 patients depends on well-being of the healthcare workforce (physical and emotional). Putting workers' well-being first, creates positive environment for quality care despite the circumstances.¹²

It is obvious from the situation that we have to live with COVID-19 for months and possibly years to come. Hence, there is a need to change policy at hospital level so as to utilize maximum capacity of healthcare workforce without harming them. It is suggested that –

- I. Possibility of COVID-19 may be considered in patients with-
 - a. Recent history of dry cough, fever and breathlessness (influenza-like or severe acute respiratory illness).
 - b. Fever with recent loss of taste/smell.
 - c. Severe acute respiratory illness of unknown aetiology.
 - d. Bilateral consolidation on chest X-ray or ground glass appearance on chest CT or interstitial oedema on chest ultrasound (not fully explained by volume overload).
 - e. Lymphopenia, high ESR or rise in CRP and suspected of viral fevers.
- II. Universal screening with rapid testing with Elisa (or testing with PCR if possible) for some categories of people- like
 - a. Pregnant women in moderate to high risk communities/countries.
 - b. Patient requiring invasive procedure including operation in moderate to high risk communities/countries.
 - c. Patient with immunocompromised status or with chronic diseases in moderate to high risk communities/countries.
- III. Prevention and control of infection by mandatory-
 - a. Provision of PPE to staff as per International/National/Local Guidelines.
 - b. Implementation of practice of health hygiene by staff.
 - c. Implementation of meticulous infection prevention and control measures.
 - d. Limiting the exposure of staff who are susceptible to severe complications of COVID-19, such as staff older than 60 years, having chronic diseases like diabetes mellitus, immunocompromised or pregnant. They should avoid contact with suspected or confirmed case.
 - e. Limiting visitors to hospital as to maintain physical distancing and spread of infections.
 - f. Instruction to patients to wear face mask and practice health hygiene.

Acknowledgement

We thank Jenifei Shah (intern) and Jesifei Shah (3rd year student) at School of Medicine, Jiao Tong University, Shanghai, for language editing.

Conflict of Interest

None

Funding

None

Author contribution

All authors contributed equally and approved the final draft.

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