

ASEAN Movement in Radiology

Summary of discussions and brainstorming session on imaging guidelines and recommendations on Thailand's COVID-19 situation

By experts in chest medicine and chest imaging

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On Monday 25 May 2020, during the time of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) or the Coronavirus disease 2019 (COVID-19) pandemic, we arranged a panel discussion via Microsoft Teams online meeting among several experts in the field of respiratory system, including a pulmonologist who leads the Thoracic Society of Thailand, 8 thoracic radiologists responsible for the radiological workflow management of COVID-19 in university hospitals from several parts of the country, World Health Organization (WHO)-Thailand officers, and a representative from Siemens Healthineers, Thailand. We discussed three frequently-asked questions/topics as followed:

Topic 1: The current situation and guidelines on the use of chest computed tomography (CT) for COVID-19 in Thailand.

All experts unanimously agreed that a chest CT should not be used for screening in cases in which COVID-19 infection or COVID-19 pneumonia is suspected, due to the fact that the outbreak incidence in Thailand was not widespread yet. There were only around 50 patients per million people, and the abnormalities of COVID-19 pneumonia found by CT did not have specific characteristics, and were similar to those that could be found in other viral pneumonia and other diseases. Nevertheless, a chest CT might be used to aid diagnosis and treatment in the following cases:

- RT-PCR test shows a negative result but clinical symptoms raise suspicion for COVID-19.
- In COVID-19 cases already confirmed by RT-PCR testing, CT may be considered to acquire baseline images, and serve as a guide for management and follow-up.
- The patient has moderate to severe pneumonia and the physician determines that a chest CT is useful in treatment planning.
- There is suspicion of complications such as pulmonary embolism.

Topic 2: What are the standard preventive measures in Thailand's hospitals in general for a chest CT examination in COVID-19 patients and during epidemic situations?

Preventive measures should utilize the universal precaution principles so as to prevent new outbreaks. This included preparation for incidences of new diseases that may occur in the future. The Royal College of Radiologists in collaboration with the Society of Radiological Technologists will jointly create the guideline, for hospitals to apply according to their particular locations and different limitations, including considering the use of a mobile capsule (if applicable), especially if the hospital has only one CT scanner.

Topic 3: What are the appropriate recommendations for a chest CT in case of suspected COVID-19 infection or suspected COVID-19 pneumonia? Can a CT screening protocol (low dose) be used?

The meeting consensus recommended that CT examination for suspected COVID-19 infection or suspected COVID-19 pneumonia be done using thin-slice images (≤ 1.5 mm) and with a diagnostic image quality*.

The consensus did not recommend the use of a low dose chest CT or a CT screening protocol because some lesions such as ground-glass opacity, a common finding in this disease, may not be invisible.

Note *Diagnostic image quality may not expose each patient to the same radiation dose, depending on the size of the patient, examination techniques, and capabilities of the CT machine.

Additional recommendations:

The expert panel unanimously agreed that in the future, there should be changes in the CT examination process, to accommodate the prolonged COVID-19 epidemic situation. This could be another "new normal". The examples of such changes may include: mandatory wearing of a surgical mask for every patient and employee, regular cleaning of the CT machine, touchpoints, and examination rooms, etc.

Supplemental detail and document:

- Publication can be accessed here along with web annexes:
<https://www.who.int/publications/i/item/use-of-chest-imaging-in-covid-19>
 - Web Annex A. Imaging for COVID-19: a rapid review
 - Web Annex B. GRADE evidence-to-decision tables

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