



Should Chest X-ray be used in the diagnosis of COVID-19

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KEY FINDINGS

While Chest x-ray is readily available and may precede RT-PCR diagnosis of COVID-19, it has low sensitivity especially early in the disease and abnormalities are non-specific

- Chest x-ray is used as part of initial diagnostic tool in some hospitals due to its availability and at times due to delay in results of reverse transcription polymerase chain reaction (RT-PCR)
- Current COVID-19 radiologic literature is dominated by Computed Tomography (CT) of the chest which has been reported to be more sensitive than x-ray
- Findings in studies among laboratory confirmed COVID-19 patients :
 - Chest x-ray typically show ground-glass opacities and consolidation in the lung periphery
 - Initial imaging results maybe normal early in the course of illness and in mildly symptomatic patients
 - Abnormalities are not specific and overlap with other infections and coronavirus pneumonias
- The American College of Radiology (ACR), Center for Disease Control and Prevention (CDC), Canadian Association of Radiologists (CAR), Canadian Society of Thoracic Radiology (CSTR) and British Society of Thoracic Imaging do not recommend the use of chest x-ray to diagnose COVID-19. Viral testing remains the only specific method of diagnosis. Confirmation with viral test is still required even if radiologic findings are suggestive of COVID-19.

RESULTS

From January to March 2020, six (6) retrospective studies and one (1) meta-analysis reported on chest x-ray findings among adults RT-PCR positive COVID-19 patients. The number of patients who underwent chest x-ray in the studies ranged from 5 to 274. Most reports were from China and described baseline findings while few included follow-up reports on progress of radiologic findings. Ground glass opacities and consolidation in the bilateral peripheral posterior lungs were the most common findings. Wong et. al (2020) reported higher sensitivity (Sns) of baseline RT-PCR (Sns=91%) compared with chest x-ray (Sns = 69%).

Disclaimer: The aim of these rapid reviews is to retrieve, appraise, summarize and update the available evidence on COVID-related health technology. The reviews have not been externally peer-reviewed; they should not replace individual clinical judgement and the sources cited should be checked. The views expressed represent the views of the authors and not necessarily those of their host institutions. The views are not a substitute for professional medical advice.

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CONCLUSION:

- Timing of imaging in relation to day of illness and severity of symptoms appear to have impact on results of Chest x-ray
- Findings of bilateral ground glass opacities and consolidation in the periphery are not specific and overlap with other infections.

Declaration of Conflict of Interest

No conflict of interest

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