



CO-RADS

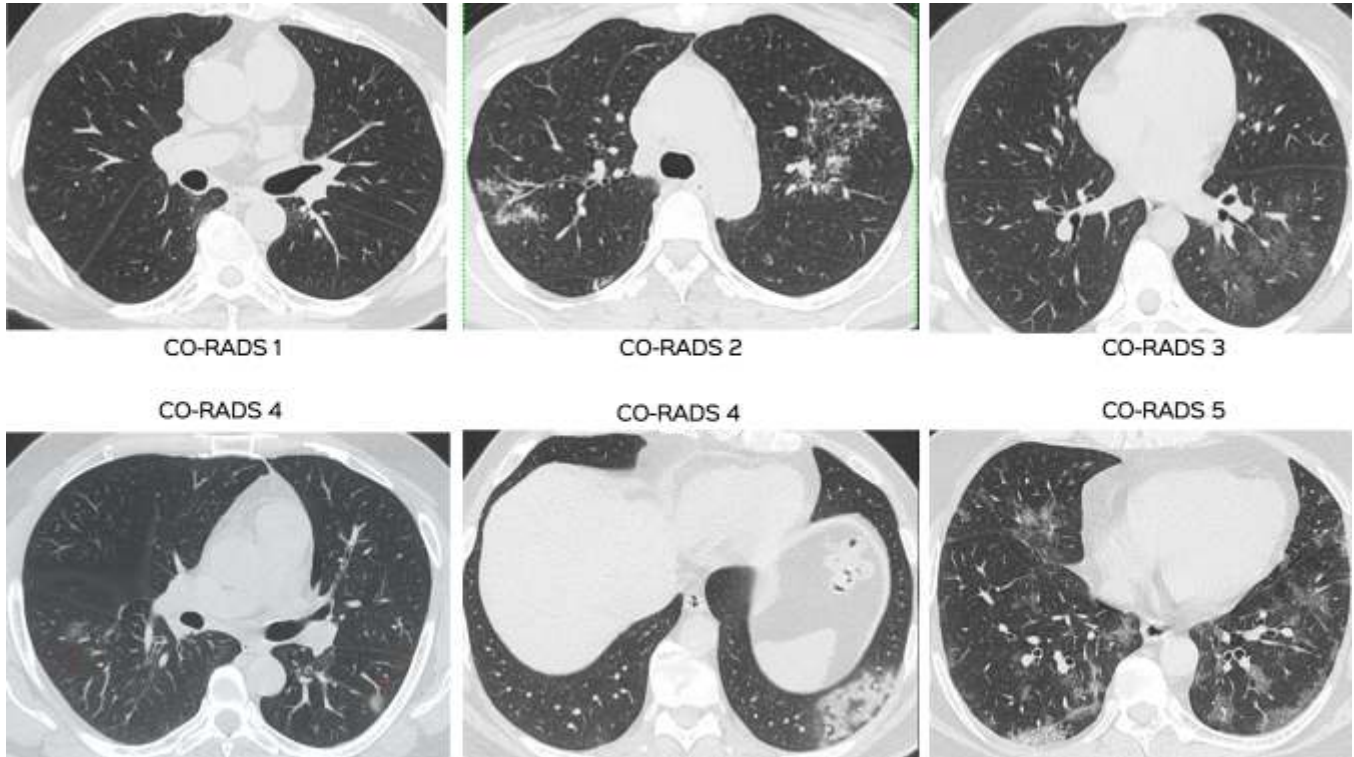


Fig. 1: Representative images depicting the different CO-RADS types. The CO-RADS 2 image is of a patient with tuberculosis.

In most reports of CT scans of the chest of patients suspected to have Covid-19 pneumonia, there will be a mention of a CO-RADS score (1-5). Radiologists throughout the country use this to communicate their confidence in the likelihood of the CT scan of the chest showing Covid-19 pneumonia or not.

CO-RADS stands for COVID-RADS and is a score similar to other scores in radiology likely BI-RADS (for diagnosis of breast cancer on mammography), PI-RADS (prostate), etc.

Classification

- CO-RADS 1 - Unlikely
- CO-RADS 2 - Low
- CO-RADS 3 - Indeterminate
- CO-RADS 4 - Level of suspicion high
- CO-RADS 5 - Classic findings
- CO-RADS 6 - Classic findings & RT-PCR +ve

Prokop M et al. Radiology 2020;Apr 27:online first

The image (Fig. 1) shows the various patterns of CO-RADS. When we say CO-RADS 1 or 2, then the chance of Covid-19 is very low. When we say CO-RADS 4 or 5, the chance that the patient has Covid-19 is very high.

This was recently validated as well by DeSmets and his group. In symptomatic patients CO-RADS 5 had a sensitivity of 77.9% and a specificity of 93.4%. If CO-RADS 4 was added, sensitivity improved to 84.3% but



At a glance

- ◆ CO-RADS is a system for grading patients with suspected Covid-19 pneumonia
- ◆ A CO-RADS 5 or 4 score means the patient almost certainly has Covid-19 pneumonia while a CO-RADS 1 or 2 score means the patient almost definitely does not have Covid-19 pneumonia.

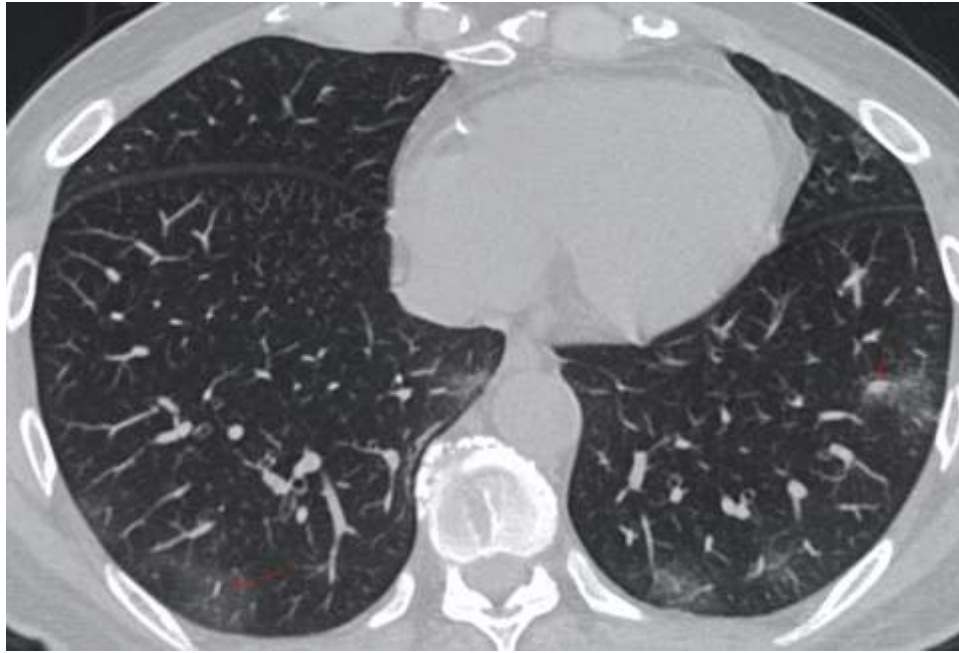


Fig. 2: This patient had CO-RADS 3/4 disease (indeterminate). The prominent vessels (red arrows) within the areas of ground-glass make this CO-RADS 5 – prominent vessels due to vasculopathy / angiopathy are a new sign seen with Covid-19 pneumonia.

specificity came down to 84.8%. However, in asymptomatic patients, while CO-RADS 5 had a high specificity of 97.9%, it had a very low sensitivity of just 18.3%. By adding CO-RADS 4, the sensitivity increased to just 31.7%, while the specificity remained at 94.4%.

De Smet K et al. Radiology. 2020 Aug 10;202708

The other system used in some parts of the world is the RSNA Expert Consensus Statement, according to which radiologists say whether the findings are “Typical”, “Atypical”, “Indeterminate” or “Negative”.

In both systems, in indeterminate (CO-RADS 3) disease, if the lesions have prominent vessels within them (Fig. 2), then the specificity for Covid-19 increases significantly.

(Ciccarese F et al. Radiol:Cardiothor Imag 2020 Aug 1; 2(4): e200312)

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