Long-term outcome after SARS-CoV-2 pneumonia

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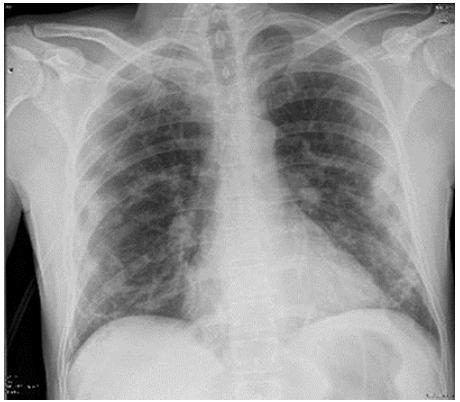
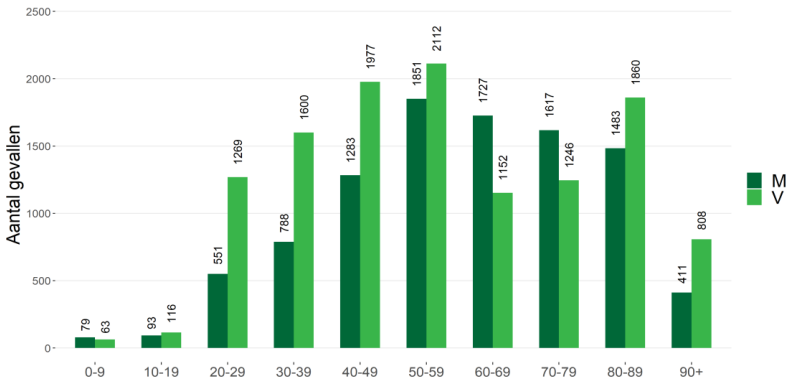
The clinical context of SARS-CoV-2 pneumonia

- Severe disease 20%

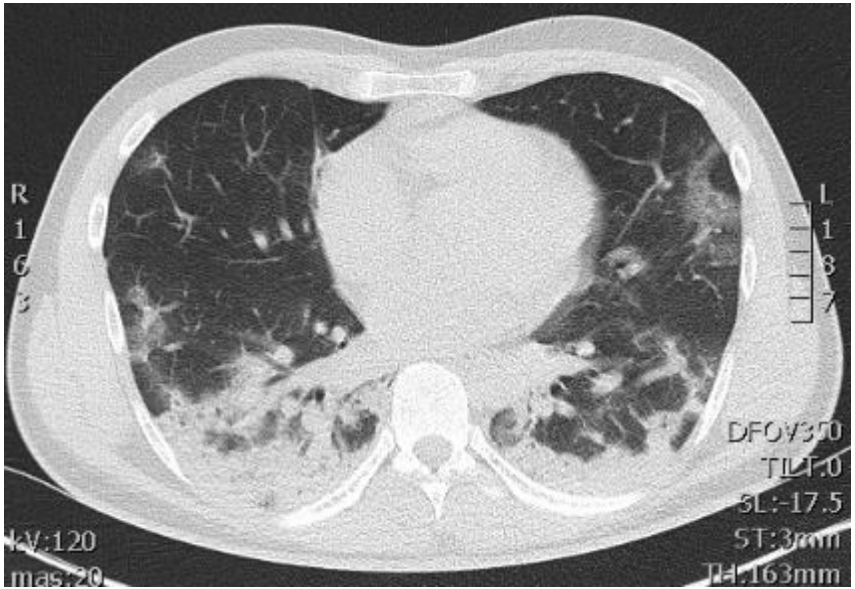


- Mainly elderly
  - 55% of hospital admissions, 47% ICU admissions are <65 yrs of age
- Respiratory failure
  - Prolonged supplemental 02 requirements
  - Protracted mechanical ventilation
- Median hospital stay 12 (-28) days



Zhou et al. Lancet 2020; Guan et al. NEJM 2020; Wang et al. J Infect Dis 2020
MMWR 2020; Sciensano, epidemiological update

Questions raised…



33 yr old male, no comorbidity, supplemental O2 requirement for 12d

- What proportion has persistent respiratory symptoms and for how long?
- Is this due to pulmonary or cardiac function deficit?
- Will radiological resolution be obtained and when?
- What is the physical, functional, emotional, social impact of hospital admission on COVID-19 survivors in the short/longer term?

Follow-up data on SARS-CoV-2 are scarce

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Clinical Infectious Diseases, ciaa271, https://doi.org/10.1093/cid/ciaa271

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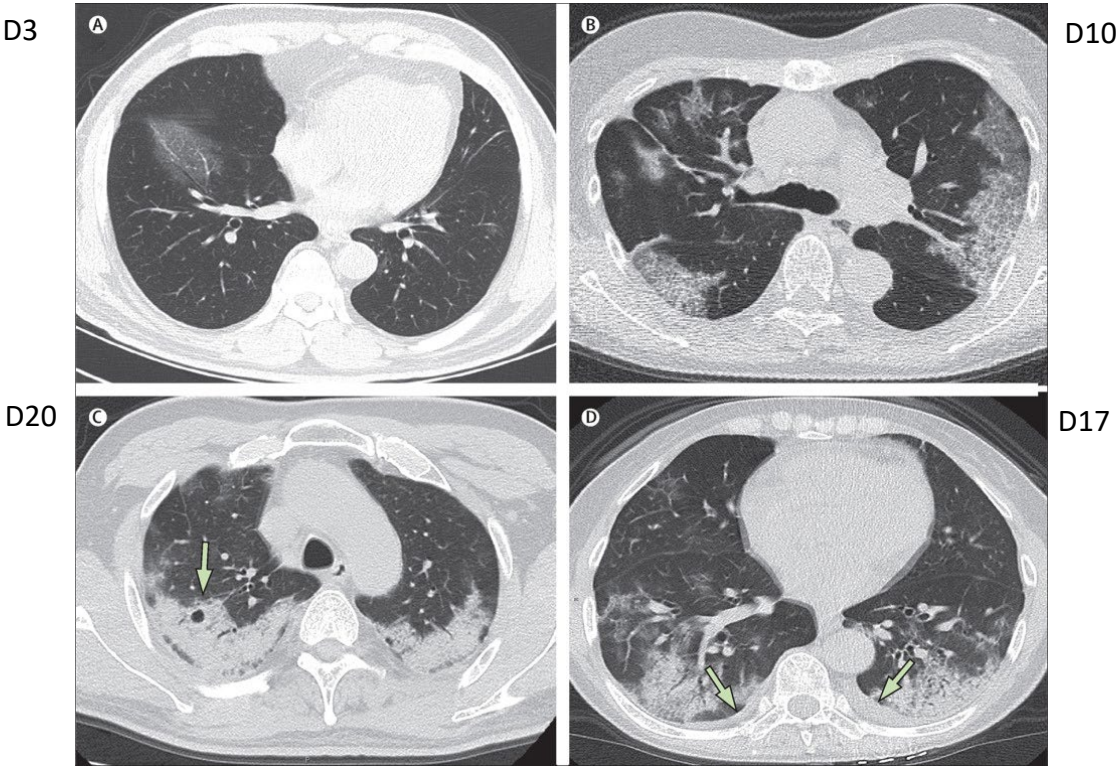
* Y.W. and C.D. contributed equally to the manuscript.

Han et al. Clin Infect Dis 2020
Wang et al. Radiology 2020

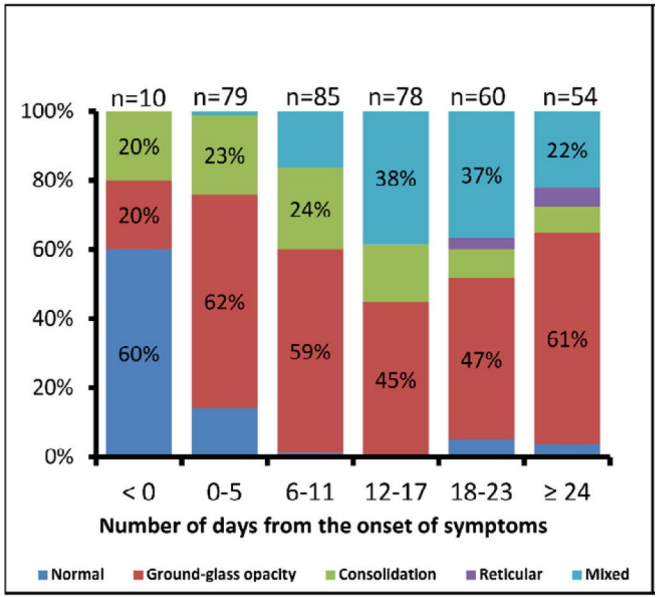
Radiological evolution over time in SARS-CoV-2



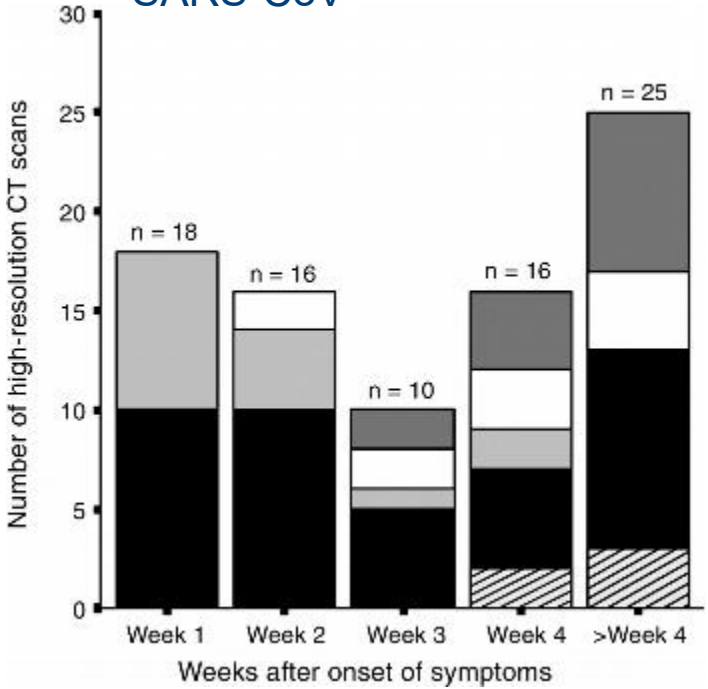
Han et al. Clin Infect Dis 2020
Shi et al. Lancet Infect Dis 2020

Temporal pattern in CT changes

SARS-CoV-2



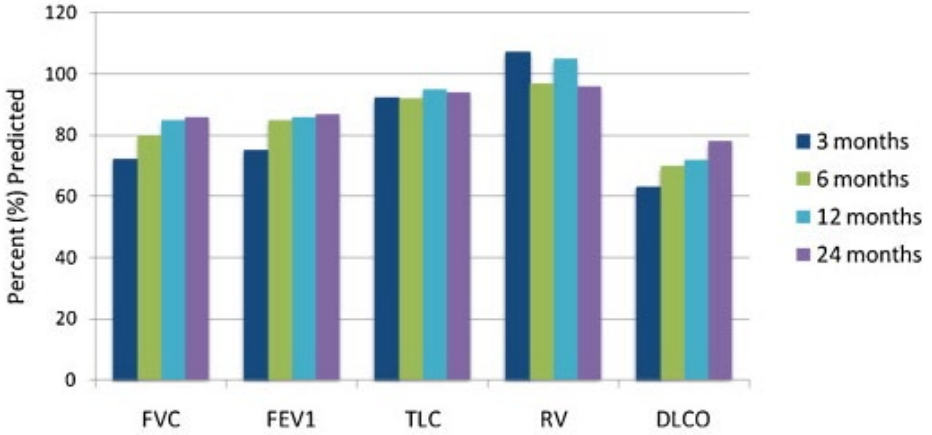
SARS-CoV



Wang et al. Radiology 2020
Ooi et al. Radiology 2004

Pulmonary function in SARS survivors

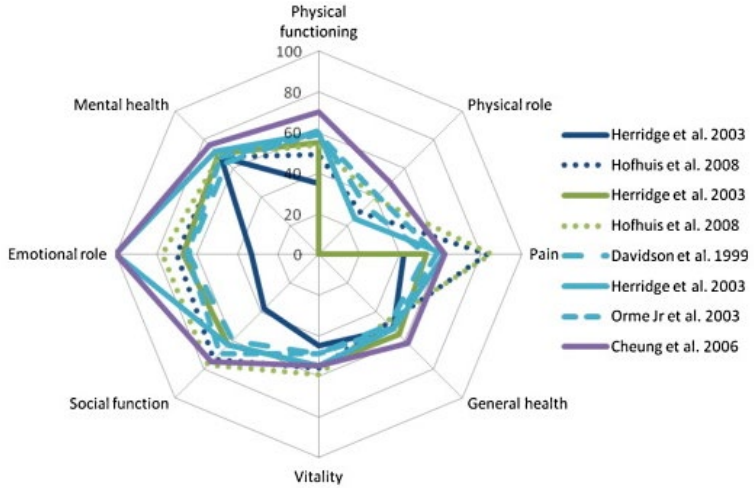
- Preserved pulmonary function
- Mildly impaired DLCO
  - at 3 months 15% had DLCO <80% predicted; spontaneous recovery



Ong et al. ERJ 2004; Ong et al Chest 2005; Hui et al. Thorax; Ngai et al. Xie et al. Chest 2005

Exercise tolerance in SARS survivors

- Impaired 6 minute walking distance
  - Increases during recovery (3-6 months) but
  - 97% remains lower than normal for different age groups
- Impaired cardio-pulmonary exercise testing in up to 41% at 12 months
  - Multifactorial, extra-pulmonary causes
- Worse health-related quality of life scores than the population norm at 12 months



Hui et al. Thorax; Ngai et al.
Xie et al. Chest 2005
Van Aerde et al. Intensive Care Med 2020

Post-Covid-19 follow-up is essential

- Novel coronavirus, novel disease entity
- Bewildering experience for most

Opportunity to evaluate
- course of disease following discharge
- impact on physical, mental, social performance, and QoL

Aim:
- To identify patients at risk for long-term sequelae and
- To tailor therapeutic interventions in timely and targeted manner

