

Program: Infectious Diseases

## Evolution of COVID-19 symptoms during the first 9 months after illness onset

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### Background

Few longitudinal data on COVID-19 symptoms are available. We evaluated symptom onset, severity and recovery across the full spectrum of disease severity, up to nine months after illness onset.

### Methods

The RECOVERED Study is a prospective cohort study based in Amsterdam, the Netherlands. Participants aged  $\geq 18$  years were enrolled following SARS-CoV-2 diagnosis via the local Public Health Service and from hospitals. Standardised symptom questionnaires were completed at enrolment, one week and month later, and monthly thereafter. Clinical severity was defined according to WHO criteria. Kaplan-Meier methods were used to compare time from illness onset to symptom recovery, by clinical severity. We examined determinants of time to recovery using multivariable Cox proportional hazards models.

### Results

Between 11 May 2020 and 31 January 2021, 301 COVID-19 patients (167[55%] male) were enrolled, of whom 99/301(32.9%) had mild, 140/301(46.5%) moderate, 30/301(10.0%) severe and 32/301(10.6%) critical disease. The proportion of participants who reported at least one persistent symptom at 12 weeks after illness onset was greater in those with severe/critical disease (81.7%[95%CI=68.7-89.7%]) compared to those with mild or moderate disease (33.0%[95%CI=23.0-43.3%] and 63.8%[95%CI=54.8-71.5%]). Even at nine months after illness onset, almost half of all participants (42.1%[95%CI=35.6-48.5]) overall continued to report  $\geq 1$  symptom. Recovery was slower in participants with  $\text{BMI} \geq 30 \text{ kg/m}^2$  (HR 0.51[95%CI=0.30-0.87]) compared to those with  $\text{BMI} < 25 \text{ kg/m}^2$ , after adjusting for age, sex and number of comorbidities.

### Conclusions

COVID-19 symptoms persisted for nine months after illness onset, even in those with mild disease. Obesity was the most important determinant of speed of recovery from symptoms.