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SYNOPSIS

04/28/2020

Review of "Strong associations and moderate predictive value of early symptoms for SARS-CoV-2 test positivity among healthcare workers, the Netherlands, March 2020"

Article citation: Tostmann A, Bradley J, Bousema T, Yiek W, Holwerda M, Bleeker-Rovers C, et al. Strong associations and moderate predictive value of early symptoms for SARS-CoV-2 test positivity among healthcare workers, the Netherlands, March 2020. Euro Surveill. 25(16):2000508. Available from: https://doi.org/10.2807/1560-7917.ES.2020.25.16.2000508

One-Minute Summary

- This study aimed to identify **symptoms associated with a positive coronavirus disease 2019 (COVID-19) test** among a cohort of symptomatic healthcare workers in the Netherlands (March 10-29, 2020) and develop a diagnostic model to predict SARS-CoV-2 infection based on early symptoms.
- Of the 803 symptomatic healthcare workers that were tested and completed a survey:
  - 11.2% (n=90) **tested positive for COVID-19**
  - 82.4% (661) were **female**
  - 55.7% (447) were between the ages of **21-40 years old**
- Univariate analyses indicated:
  - **None of the reported respiratory symptoms were associated with test-positivity**, and sore throat was significantly less common among test-positives compared to test-negative cases (40.0% vs. 56.1%, p=0.004).
  - Reported **non-respiratory symptoms associated with test-positivity** included: anosmia (test-positive: 46.8% vs. test-negative: 3.7%), muscle ache (63.3% vs. 20.1%), ocular pain (34.4% vs. 10.5%), general malaise (63.3% vs. 29.2%), headache (71.1% vs. 41.5%), extreme tiredness (57.0% vs. 32.1%), and fever (56.7% vs. 32.7%) (p<0.001 for all).
- A simple predictive model, based on non-respiratory symptoms (≥3), was moderately discriminative with a **sensitivity of 91.2% and a specificity of 55.6%**.
- **Main Finding:** Current public health policy in the Netherlands requiring individuals reporting mild respiratory symptoms to self-isolate could be extended to include **general non-respiratory symptoms or anosmia**.

Additional Information

- Of the 1,247 symptomatic healthcare workers tested, 803 completed surveys assessing symptoms for an overall response rate of 64.4%.

- Initially, the survey assessed respiratory and general non-respiratory symptoms and was completed by 627 HCW (56 COVID-19 positives) between March 10-23, 2020. After reports on anosmia and gastrointestinal illness in the initial COVID-19 positive patients, the survey was adapted on March 24 to also include anosmia, diarrhea, nausea and extreme tiredness. This updated survey was completed by 176 HCW (34 positives) between March 24-30, 2020.
- Of the 803 healthcare workers who completed a survey, the most commonly reported symptoms included:
    - Among test-negative cases: cough (59.5%), sore throat (56.1%), and common cold (50.9%)
    - Among test-positive cases: headache (71.1%), general malaise (63.3%), and muscle ache (63%)

PHO Reviewer's Comments

- None.

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Review of "Strong associations and moderate predictive value of early symptoms for SARS-CoV-2 test positivity among healthcare workers, the Netherlands, March 2020". Toronto, ON: Queen's Printer for Ontario; 2020.

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