

SYNOPSIS

03/02/2020

Review of “Differential diagnosis of illness in patients under investigation for the novel coronavirus (SARS-CoV-2), Italy, February 2020”

Article citation: Bordi L, Nicastri E, Scorzolini L, Di Caro A, Capobianchi MR, Castilletti C, et al. Differential diagnosis of illness in patients under investigation for the novel coronavirus (SARS-CoV-2), Italy, February 2020. *Euro Surveill.* 2020;25(8):2000170. Available from:

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.8.2000170>

One-Minute Summary

- This article describes the laboratory **detection of respiratory pathogens in the first 126 patients tested for SARS-CoV-2**, the virus that causes coronavirus disease 2019 (COVID-19), in Italy between January 21 – February 7, 2020.
 - Consideration for COVID-19 testing was based on clinical suspicion of a viral respiratory illness, recent travel to Asia or contact with a probable or confirmed case of COVID-19.
 - 64 male and 62 female patients were tested (mean age 35 years, range 1 – 85 years).
 - 52 patients were Italian citizens, 64 were Chinese citizens and six had other nationalities.
- Nasopharyngeal swabs were collected and tested for COVID-19 by real-time PCR and other respiratory pathogens using a multiplex molecular PCR assay.
- **2.4% (3/126) of patients tested positive for COVID-19. None were co-infected** with another pathogen.
- **44.4% (56/126) tested negative** for any respiratory pathogen.
- **53.2% (67/126) tested positive for at least one respiratory pathogen** other than COVID-19.
 - The **most common** pathogens detected were **influenza A** (22.2%; 28/126), **influenza B** (9.5%; 12/126) and **rhinovirus/enterovirus** (8.7%; 11/126). Of the influenza A-positive specimens, 42.9% (12/28) were influenza A(H1N1)pdm09, 46.4% (13/28) were influenza A(H3N2) and 10.7% (3/28) were untyped.
 - Bacterial infections represented a smaller proportion of detected pathogens, with ***Mycoplasma pneumoniae* detected in 4.0% (5/126)**. *Legionella pneumophila* and *Streptococcus pneumoniae* were each found in only 0.8% (1/126) patients.
 - **Mixed infections** (two different respiratory viruses) were detected in **4.8% (6/126)** of patients.

Additional Information

- At least 63 of the 126 patients (50%) were hospitalized.
- Real-time PCR for COVID-19 was done using a protocol that detects the E gene and RdRp gene and was performed at the Lazzaro Spallanzani National Institute for Infectious Diseases (INMI) Laboratory of Virology in Rome.

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- Testing for other respiratory pathogens was done at the INMI Laboratory or the original submitting laboratory using the QIAstat-Dx multiplex respiratory panel, which detects: adenovirus, bocavirus, coronavirus 229E, coronavirus HKU1, coronavirus NL63, coronavirus OC43, human metapneumovirus, influenza A, influenza A subtype H1N1/pdm09, influenza A subtypes H1 and H3, influenza B, parainfluenza virus 1–2–3–4, respiratory syncytial virus A/B, rhinovirus/enterovirus, *Bordetella pertussis*, *Legionella pneumophila*, *Mycoplasma pneumoniae*.

PHO Reviewer’s Comments

- These data only reflect pathogens that are detected by the molecular respiratory multiplex assay used by the authors. Potential pathogens not included in this panel would not be detected.
- This study reported on cases tested in Italy until February 7, 2020 and did not report any suspected cases tested in the Lombardia region. Since then, the Lombardia region has reported a growing COVID-19 outbreak and as of March 1, 2020, is the region with [the most cases](#) in Italy. This underscores how rapidly the COVID-19 situation is evolving.

Citation

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