

Symptoms of viral infection and PCR positivity rates of SARS-CoV2 in healthcare professionals in Paris, France

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Background

On March 10, 2020, the World Health Organization declared a global pandemic of the novel coronavirus SARS-CoV-2. In France, the testing policy in the beginning of the pandemic suggested a restriction to symptomatic persons with risk factors or health care workers (HCW). We report the results of prevalence testing for SARS-CoV-2 and the associated symptoms in HCWs presented with influenza-like illness during the first month at St-Antoine Hospital in Paris

Materials and methods

We prospectively collected nasopharyngeal swabs from persons attending the outpatient testing unit of StAntoine University Hospital in Paris from February 28, to March 31, 2020. Real-time polymerase chain reaction (RT-PCR) was performed for SARS-CoV-2 and for the most common respiratory pathogens. Patient characteristics, symptoms at presentation, occupation and risk factors were collected. Data were analyzed for normality and descriptive statistics were presented as a number (%) for categorical variables and median (interquartile range; IQR) for continuous variables. Chi-square test was used for categorical variables.

Results

823 patients sought medical care

623 patients (74.9%) qualified for testing by RT-PCR, among whom 481 (77.2%) were HCW.

Median (IQR) age – **37 years** (29 – 50). 181 males (29.1%) / 442 females (70.9%)

Table 1. Characteristics and symptoms in patients tested for SARS-CoV-2 in Paris, France, 28 February - 31 March, 2020 (n=623). n/s – not significant

Characteristics	Overall N=623	SARS-CoV2 N=175	Negative N=448	p
Age (years), median (IQR)	37 (29-50)	38 (29-52)	37 (30-49)	n/s
Male, n (%)	181 (29.1)	57 (32.6)	124 (27.7)	n/s
HCW, n (%)	481 (77.2)	145 (82.9)	336 (75.0)	<0.05
Comorbidities, n (%)	164 (26.3)	42 (24.0)	122 (27.2)	n/s
Days from the onset, median (IQR)	3 (2-4)	3 (2-4)	3 (2-5)	n/s
Fever, n (%)	392 (62.9)	138 (78.9)	254 (56.7)	<0.00001
Cough, n (%)	430 (69.0)	124 (70.9)	306 (68.3)	n/s
Productive cough, n (%)	31 (5.0)	10 (5.7)	21 (4.7)	n/s
Sore throat, n (%)	105 (16.9)	19 (10.9)	86 (19.2)	<0.05
Rhinorrhea, n (%)	211 (33.9)	55 (31.4)	156 (34.8)	n/s
Nasal congestion, n (%)	204 (32.7)	55 (31.4)	149 (33.3)	n/s
Dyspnea, n (%)	41 (6.6)	10 (5.7)	31 (6.9)	n/s
Anosmia, n (%)	76 (12.2)	46 (26.3)	30 (6.7)	<0.00001
Chest pain, n (%)	48 (7.7)	12 (6.9)	36 (8.0)	n/s
Headache, n (%)	221 (35.5)	79 (45.1)	142 (31.7)	<0.01
Chills, n (%)	174 (27.9)	58 (33.1)	116 (25.9)	n/s
Vomiting, n (%)	14 (2.2)	3 (1.7)	11 (2.5)	n/s
Nausea, n (%)	25 (4.0)	7 (4.0)	18 (4.1)	n/s
Diarrhea, n (%)	52 (8.3)	15 (8.6)	37 (8.3)	n/s
Myalgia, n (%)	223 (35.8)	82 (46.9)	141 (31.5)	<0.01
Arthralgia, n (%)	189 (30.3)	62 (35.4)	127 (28.3)	n/s
Anorexia, n (%)	21 (3.4)	4 (2.3)	17 (3.8)	n/s
Fatigue, n (%)	121 (19.4)	33 (18.9)	88 (19.6)	n/s
Aphonia, n (%)	5 (0.8)	1 (0.6)	4 (0.9)	n/s
Abdominal pain, n (%)	15 (2.4)	3 (1.7)	12 (2.7)	n/s
Sweats, n (%)	22 (3.5)	5 (2.9)	17 (3.8)	n/s
Vertigo, n (%)	9 (1.4)	3 (1.7)	6 (1.3)	n/s

The overall prevalence of SARS-CoV2 was 28.1%. Among patients with negative SARS-CoV2 PCR, 37 (4.5%) were carriers of another respiratory virus, mainly influenza virus (35%). Compared to other patients, HCWs had higher prevalence of SARS-CoV2 (30.1% vs. 21.1%, p<0.04).

The median (IQR) onset of symptoms before the test was 3 (2–4) days in patients with COVID-19.

Fever and cough were noted in 138 (78.9%) and 124 (70.9%) patients respectively while anosmia, fever, myalgia and headache were significantly more common in patients with SARS-CoV2 infection (26.3% vs. 6.7%, 78.9% vs. 56.7%, 46.9% vs. 31.5% and 45.1% vs. 31.7% respectively) (Table 1).

Conclusion

At the very beginning of the COVID-19 epidemic in France, the overall prevalence of SARS-CoV2 positivity in a hospital screening center in Paris was 30.1% among HCW who sought medical care for influenza-like illness, which highlights the importance of screening of health care professionals for SARS-CoV2 during an epidemic period.