

# Prevalence of respiratory virus infections during SARS-CoV-2 epidemic

M. Sukach, P. Ingiliz, N. Valin, K. Boussaid, J.M. Jullien, T. Chiarabini, L. Morand-Joubert, J. Gozlan, A. Schnuriger, K. Lacombe  
Saint Antoine Hospital, Paris, France

## Background

On March 10, 2020, the World Health Organization declared a global pandemic of novel coronavirus SARS-CoV-2. This epidemic stroke while the winter epidemics of respiratory viruses were not yet finished. In order to better understand the etiologies of influenza-like syndromes in the COVID-19 period, we analyzed the samples taken in a hospital screening center in Paris, France at the very beginning of the epidemic.

## Materials and methods

We collected nasopharyngeal swabs from persons attending the outpatient testing unit of St-Antoine University Hospital in Paris from February 28, to March 27, 2020. Real-time polymerase chain reaction (RT-PCR) was performed for SARS-CoV-2 and for the most common respiratory pathogens. Patient characteristics and symptoms at presentation were collected. Data were analysed 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

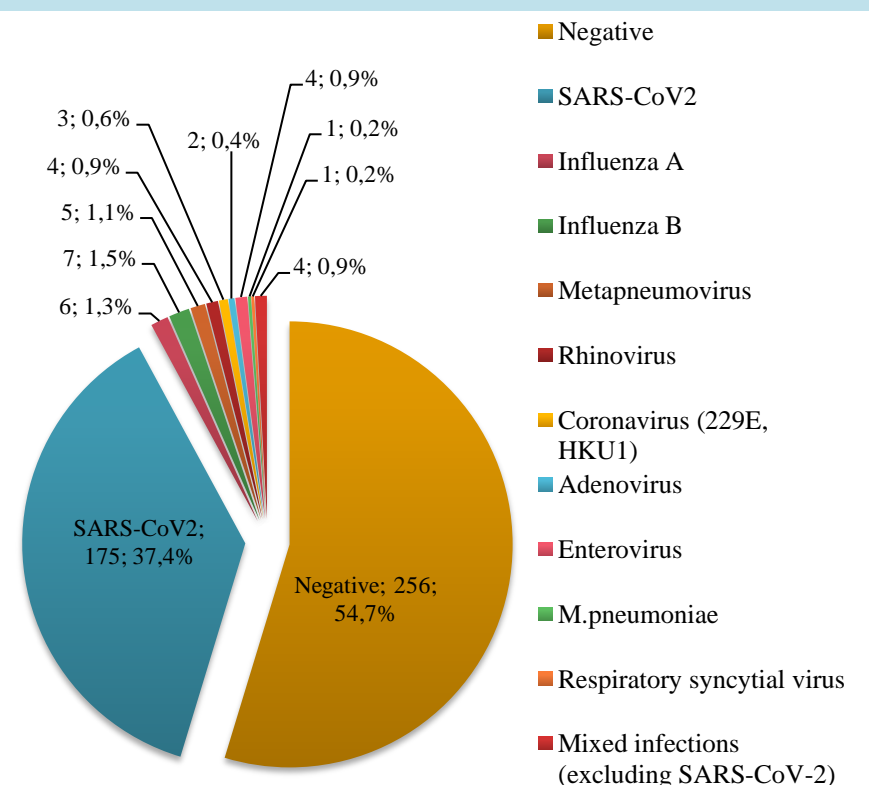
**707 patients** sought medical care  
**468 patients (66.2%)** qualified for testing by RT-PCR  
Median (IQR) age – **37 years** (29 – 50). 139 males (29.7%) / 329 females (70.3%)

Table 1. Symptoms in patients tested for SARS-CoV-2 and other respiratory pathogens, Paris, France, 28 February - 27 March, 2020 (n=468)

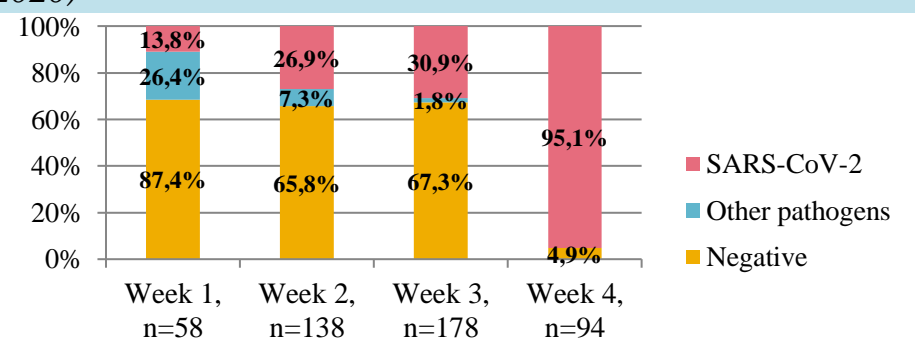
Symptoms	SARS-CoV2 N=175	Other pathogens N=37	Negative N=256	P
Fever, n (%)	138 (78.9)	24 (64.9)	169 (66.0)	<0.02
Cough n (%)	124 (70.9)	25 (67.6)	188 (73.4)	n/s
Productive cough, n (%)	10 (5.7)	4 (10.8)	17 (6.6)	n/s
Sore throat, n (%)	19 (10.9)	9 (24.3)	61 (23.8)	<0.003
Rhinorrhea, n (%)	55 (31.4)	12 (32.4)	103 (40.2)	n/s
Dyspnea n (%)	10 (5.7)	2 (5.4)	25 (9.8)	n/s
Anosmia, n (%)	46 (26.3)	1 (2.7)	2 (0.8)	<0.00001
Chest pain, n (%)	12 (6.9)	1 (2.7)	19 (7.4)	n/s
Headaches, n (%)	79 (45.1)	11 (29.7)	72 (28.1)	<0.002
Myalgia, n (%)	82 (46.9)	17 (45.9)	88 (34.4)	n/s
Arthralgia, n (%)	62 (35.4)	7 (18.9)	70 (27.3)	n/s
Fatigue, n (%)	33 (18.9)	7 (18.9)	38 (14.8)	n/s
Anorexia, n (%)	4 (2.3)	5 (13.5)	6 (2.3)	n/s
Aphonia, n (%)	1 (0.6)	1 (2.7)	1 (0.4)	n/s
Chills, n (%)	58 (33.1)	14 (37.8)	63 (24.6)	n/s
Vomiting, n (%)	3 (1.7)	1 (2.7)	7 (2.7)	n/s
Nausea, n (%)	7 (4.0)	4 (10.8)	13 (5.1)	n/s
Diarrhea, n (%)	15 (8.6)	1 (2.7)	15 (5.9)	n/s
Abdominal pain, n (%)	3 (1.7)	1 (2.7)	1 (0.4)	n/s

n/s – not significant

Viral and bacterial agents detected in patients tested for SARS-CoV-2 infection, n=468



Evolution of SARS-CoV2 and other pathogens' prevalence over the weeks of study period (28 February – 27 March, 2020)



## Conclusion

Over the period of March 2020 seasonal respiratory viruses quickly disappeared while COVID-19 affected more than a third of people consulting for an influenza-like illness in a hospital screening center in Paris. The anosmia-fever-headache triad has been found much more frequently in association with SARS-CoV2 than with other respiratory viruses and could be a warning sign in case of a new epidemic