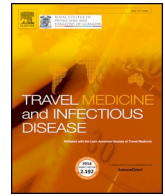




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# Travel Medicine and Infectious Disease

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## Comparison of clinical characteristics of coronavirus disease (COVID-19) and severe acute respiratory syndrome (SARS) as experienced in Taiwan

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#### Dear Editor:

Several cases of new atypical pneumonia were reported since Dec 8, 2019 in Wuhan, Hubei province, China. A novel beta-coronavirus was identified by the Chinese Centre for Disease Control and Prevention from the throat swab sample of a patient, that was subsequently named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by the World Health Organisation (WHO) on 11 February 2020 [1]. Prior to this only two mutant strains of coronaviruses have caused outbreaks of severe acute respiratory disease worldwide; one is severe acute respiratory syndrome coronavirus (SARS-CoV), in 2003, while the other is the middle east respiratory syndrome coronavirus (MERS-CoV), in 2012.

We analysed the clinical picture of the first ten coronavirus disease (COVID-19) cases in Taiwan till 31 January 2020, and compared them to SARS in terms of epidemiology, symptoms, laboratory characteristics, and outcome.

During the SARS outbreak from 25 April-19 May 2003, 50 patients visited our emergency department [2], 21 with suspected SARS, and 29 with probable SARS (33 women, 17 men). The age of the patients ranged from 5 to 90 years, with a mean age of 36.6 years, which was around 20 years younger than the patients with COVID-19.

Women were more susceptible to SARS (M: F = 0.52: 1), unlike the COVID-19 outbreak in Wuhan. (M: F = 1.3: 1) [3]. The gender and age relationship between COVID-19 and SARS is shown in Fig. 1.

In a previous report, among 425 patients with novel coronavirus-infected pneumonia, the median age was 59 years, and 56% were male [3]. In another report from China, as of 24 January 2020, among the hospitalised COVID-19 patients, 73% were male and the median age was 49 years; 32% had underlying diseases such as diabetes mellitus, hypertension and cardiovascular diseases [4].

The first ten SARS-CoV-2 infected patients from Taiwan (7 females and 3 males) were isolated and treated in negative pressure single room. The median duration from initial symptoms to confirmed diagnosis was  $4.2 \pm 2.9$  days. The most common symptoms were cough (60%), fever (50%), flu symptoms (40%), rhinorrhoea (30%), and infiltrations in chest X rays (30%); less common symptoms were muscle ache (10%), sore throat (10%), and shortness of breath (10%). Half the

patients had mild flu-like symptoms, possibly because of the lower viral load in the environment.

Hypoalbuminemia in probable SARS cases reaches statistical significance, and can be utilised with reverse A/G ratio to distinguish SARS patients earlier (Table 1). There are no reports yet to prove an association between COVID-19 and hypoalbuminemia.

The epidemic situation of COVID-19 is rapidly changing with each passing day. Until 31 January 2020, the mortality rate for hospitalised COVID-19 patients was approaching 14–15% [4]. A report dated 25 January 2020 described the median age in mortality cases as 75 years. Fever and cough were the common symptoms in deaths [5]. The estimated case fatality rate of SARS was 17.2%, which was slightly higher than that in COVID-19 (14–15%) [6].

From our data we know that COVID-19 affects males more, unlike SARS, which is predominant in females. The COVID-19 patients are around 20 years older than the patients with SARS. Young adults are more susceptible to SARS than children and the elderly. Reverse A/G ratio and hypoalbuminemia are noted in SARS patients. Overall, a longer observation period is needed to study the SARS-CoV-2 outbreak.

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#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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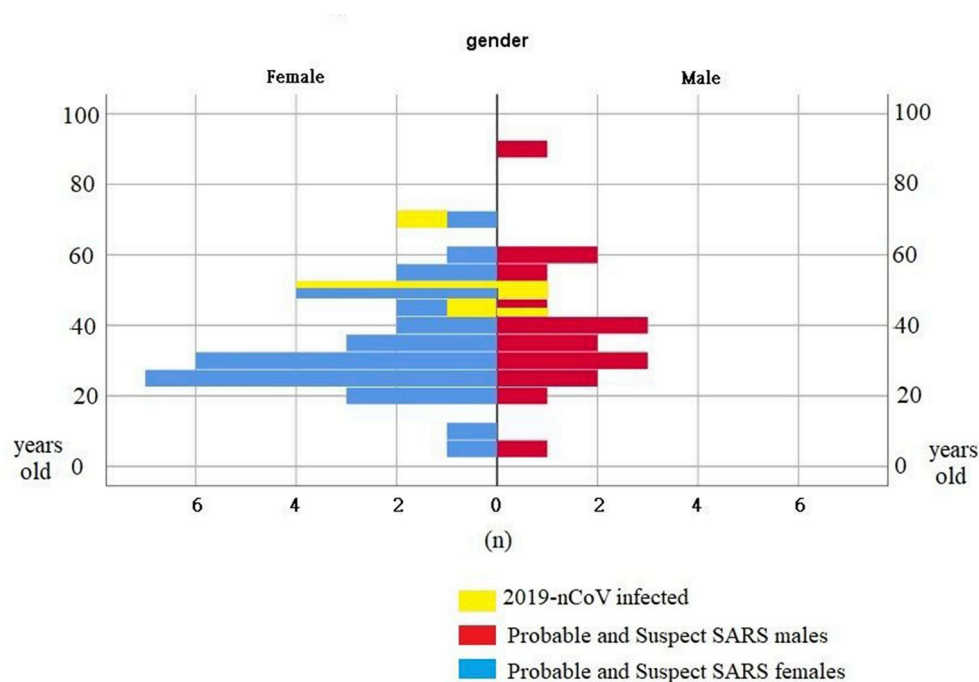


Fig. 1. Gender and age relationship in COVID-19, SARS cases.

Table 1

Hypoalbuminemia is noted in probable SARS patients with significant statistical difference.

	Probable SARS (29 cases)	Suspect SARS (21 cases)	All	P value, 2-tailed
Age (years old)	35.9 ± 13.4	20.0 ± 4.4	36.6 ± 16.3	0.208
Albumin (gm/dL)	3.2 ± 0.7	3.6 ± 0.4	3.33 ± 0.6	0.037*
A/G ratio	1.1 ± 0.3	1.2 ± 0.2	1.1 ± 0.2	0.389

(\* indicates  $p < .05$ ).

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