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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 ± 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

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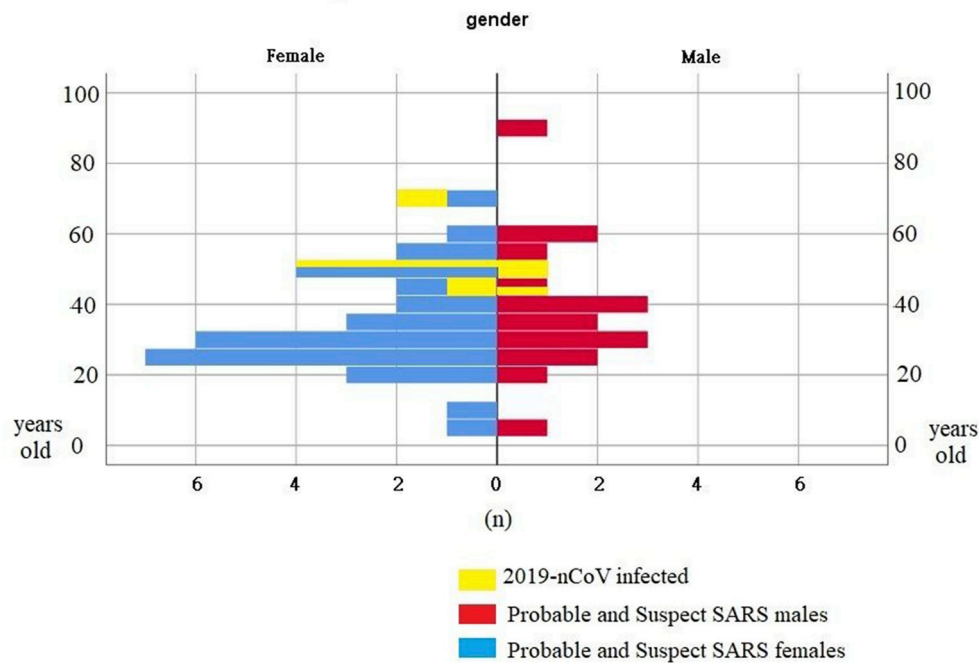


Fig. 1. Gender and age relationship in COVID-19, SARS cases.

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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