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COMMENTS

Emerging COVID-19-related deaths during home recuperation in Japan

Keywords: COVID-19, death investigation, home recuperation, out-of-hospital death, unnatural death.

Dear Editor,

We read with great interest the article by Tan *et al*. introducing the telehealth service in Singapore,[1] which could be one option to alleviate our emerging problem in Japan.

This winter, Japan is now experiencing its third and largest wave of the novel coronavirus disease 2019 (COVID-19) outbreak and the number of patients has risen dramatically, making medical resources scarcer than ever. In October, the Japanese Ministry of Health, Labor and Welfare revised the admission criteria for COVID-19 patients to limit the scope to high-risk patients, which are: (i) age >65 years; (ii) underlying respiratory disease; (iii) high risk of organ disorder, such as kidney disease, cardiovascular disease, diabetes, hypertension or obesity; (iv) taking immunosuppressive drugs, such as for organ transplant, immunosuppressant medication or carcinostatic agents; (v) pregnancy; and (vi) moderate or severe symptoms of COVID-19.[2] Unfortunately, this offered only a temporary respite, and now even older patients or those with known risk factors have been forced to remain at home since December if they do not have severe symptoms. This has led to the emerging problem of out-of-hospital sudden death as a result of COVID-19.

An 86-year-old woman had a polymerase chain reaction test for SARS-CoV-2 after close contact with multiple COVID-19 patients at a visiting day care service for seniors. The next day, she was diagnosed as positive and asked to stay home. She reported having fever to the regional health center every day, but the center failed to arrange for her admission. One week after the diagnosis, her son went to her home, because she did not respond to phone calls, and found her dead. Post-mortem computed tomography showed severe pneumonia.

Similar cases have been reported in other regions of Japan. According to media reports, at least 17 COVID-19 patients have died at home or in a hotel for recuperation between December 2020 to January 2021.[3] We searched for information about these 17 deaths through multiple news websites or local government sources. There were three women and nine men (sex undisclosed, five cases). Their age distribution was three in their 50s, five in their 60s, two in their 70s and two in their 80s, (age undisclosed, 4 cases). The time from COVID-19 diagnosis to death was 1–10 days (mean 4 days, median 3 days).

The mortality rate of COVID-19 rises dramatically for patients aged >60 years, with mortality rates of <0.3% for patients aged in their 50s or younger, 1.4% for those aged in their 60s, 4.8% for those aged in their 70s and 12.0% for those aged in their 80s or older.[4] All patients aged >60 years preferred admission under the initial criteria, but this proved impractical.[2] Now, a major problem in Japan is that some patients with COVID-19 progress rapidly at home, and die suddenly without medical providers recognizing the deterioration of their condition.

An effective system of follow up for non-admitted patients is required. Monitoring of body temperature by staff at a regional health center is inadequate, because most of them are non-medical providers who are not trained for medical interview. Also, considering the phenomenon of so-called "happy hypoxemia," where patients do not experience subjective symptoms until reaching very low PaO_2,[5] periodic checks using a pulse oximeter are necessary. Radiological examination of the chest is also required 5–7 days after onset considering the time course of COVID-19 that progresses to pneumonia.[6] However, given that nine of the 17 aforementioned deaths in Japan occurred within 4 days after diagnosis, closer observation would be desirable. The telehealth service introduced by Tan *et al*. supports the control of chronic conditions of older adults to minimize their traveling to hospitals,[1] but similar service might be of assistance to check the conditions of in-house COVID-19 patients. The establishment of collaboration with local home doctors might reduce the burden on medium- to large-scale hospitals that must treat patients requiring admission, and if social workers or nurses at geriatric care facilities join to support the communication between doctors

and patients, the burden on regional health centers would also be reduced.

The capacity of treatment and follow up for COVID-19 patients by admission is almost at the threshold, but we still have a method for out of hospital care. No more deaths from COVID-19 should be handled as "unnatural deaths".

Disclosure statement

The authors declare no conflict of interest.

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Comment on "Calf circumference and risk of cardiovascular disease"

Dear Editors,

In response to Dr Pinar Soysal, our study's result showed an inverse association between calf circumference (CC) and cardiovascular disease (CVD) risk.[1,2] CC is considered the screening method for sarcopenia and frailty. The previous study showed that sarcopenia co-existing with obesity might increase their effect on metabolic disorders, CVD and mortality.[3] At present, the correlation between the risk of sarcopenia and CVD is still controversial. According to the Asian Working Group for Sarcopenia 2014 consensus, sarcopenia was defined as "age-related loss of muscle mass, plus low muscle strength and/or low physical performance." CC is one of the screening

Table 1 Association between the calf circumference and the Framingham 10-year risk of coronary heart disease in the subgroups of obesity and non-obesity[†]

	CC quartiles	β (95% CI)	P-value
Male			
Non-obesity	Total	−0.272 (−480, −0.064)	0.010
	Q2 *vs* Q1	−1.997 (−3.869, −0.125)	0.037
	Q3 *vs* Q1	−2.558 (−4.198, −0.918)	0.002
	Q4 *vs* Q1	−1.236 (−2.749, 0.277)	0.109
Obesity	Total	−0.453 (−0.982, 0.076)	0.093
	Q2 *vs* Q1	0.008 (−9.017, 9.032)	0.999
	Q3 *vs* Q1	0.837 (−8.277, 9.951)	0.856
	Q4 *vs* Q1	1.954 (−7.841, 11.750)	0.693
Female			
Non-obesity	Total	−0.605 (−0.826, −0.383)	<0.001
	Q2 *vs* Q1	−3.992 (−5.576, −2.407)	<0.001
	Q3 *vs* Q1	−2.595 (−3.945, −1.245)	<0.001
	Q4 *vs* Q1	−1.822 (−3.024, −0.619)	0.003
Obesity	Total	−0.338 (−0.639, −0.037)	0.028
	Q2 *vs* Q1	−6.943 (−11.713, −2.173)	0.005
	Q3 *vs* Q1	−5.382 (−10.376, −0.388)	0.035
	Q4 *vs* Q1	−5.908 (−11.528, −0.288)	0.040

[†]Obesity is defined as body mass index ≥27 kg/m^2.

CC, calf circumference; Q1, quartile 1; Q2, quartile 2; Q3, quartile 1; Q4, quartile 4.