


Disclosure statement

No conflict of interest.

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Geriatric practice during and after the COVID-19 pandemic

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Dear Editor,

Two aspects warrant consideration regarding the ongoing COVID-19 pandemic: prevention of COVID-19 infection and protection from the related changes among the elderly. For prevention, the Tokyo metropolitan government has announced a stay at home campaign that requests residents to stay at home. For the latter, the Japan Geriatrics Society (JGS) established the “COVID-19, Practice Caution for Older People” in March 2020 to raise awareness on “prevention of frailty” (Fig. 1).

To achieve both goals, we need to avoid close contact and lead a routine, healthy life. COVID-19 influence can trigger age-related diseases other than frailty; therefore, it is necessary to identify the impact of this pandemic on the geriatric population. Here, we present two aspects of COVID-19, i.e., (i) physical effects, including frailty and aggravation of age-related comorbidities, and (ii) psychosocial effects of COVID-19-induced changes.

COVID-19 is known to have poor prognosis in the elderly because it tends to be more severe in that population.¹ There might be an association between angiotensin-converting enzyme (ACE) 2 levels and COVID-19 infection,² and obese and diabetic patients may have increased ACE2 levels.^{3,4} Therefore, patients with these diseases should be cautious of susceptibility and aggravation of COVID-19 infection. Although the long-term effects of COVID-19 infection on humans are unclear, the potential effects of excessive cytokines have been reported; inflammatory cytokines can cause frailty,⁵ cognitive deterioration⁶ and cardiovascular disease.⁷ Thus, further research is needed to investigate the effects of COVID-19 on various age-related diseases in addition to frailty.

COVID-19 infections have a tremendous effect on the affected individual and the population due to the need for self-restraint and social distancing. Japan has experienced the 2011 Great East Japan Earthquake and the 2016 Kumamoto

Earthquake, and has developed medical care for disasters. During this pandemic, several situations similar to those observed during natural disasters have emerged for the elderly. Decreased physical activity can cause hyperglycemia, increased susceptibility to infection, increased cardiovascular diseases, worsened psychological state, worsened cognitive function and more bone joint diseases. Social interaction is particularly important for the elderly. The battle with the COVID-19 pandemic is expected to last a long time, and this situation affects not only our daily life, but also our mental health. Mental health issues, including depression, discontent, hopelessness, hostility, anger and life events can cause incidents of stroke or cardiovascular disease and increase mortality.⁸ Behavioral and psychological symptoms of dementia may worsen. In contrast, protective psychological factors against stressors that include optimism, positive coping style, positive attitude toward aging and sense of coherence are related to a reduced incidence of stroke.⁸ Psychosocial interventions are crucial for the elderly people during and after the COVID-19 pandemic to prevent stroke and cardiovascular disease.

To maintain the physical functions and daily routine of the elderly, the JGS recommends eight points related to the following three aspects: (i) exercise and nutrition, (ii) oral function, and (iii) social support (Fig. 1). It has been challenging to achieve these proposed practices and encourage people. Moreover, there are several unresolved issues: How do we restore our daily life? Is there any other communication option aside from calling our families? Is it not important to have an outpatient visit along with telephone consultation? To resolve these points, we need to develop a new medical care system for the elderly in consultation with clinicians, healthcare workers and researchers across the globe. Encouraging and educating the elderly in the use of personal computers could enable online group exercise therapy sessions, nutrition guidance and social networking. Information technology, including robots, would

What are we to do under conditions of self-restraint? We must prevent the progression of frailty!

Let's reduce the time spent not moving around.

Protect your body by performing exercises you can do from home!

● **Reduce sitting time!**

It is important to spend a healthy amount of time standing and walking around. Move your body in small spurts when you can, such as by walking around during TV commercials.

● **Maintain muscle! Be careful not to let your joints stiffen.**

Even minor exercises at home, such as radio calisthenics, can help prevent muscle weakness. Resistance exercises that strengthen the leg muscles, such as squats, are also effective.

● **Let's exercise outdoors, like taking a walk in the sunshine !**

If the weather is fine, feel free to move around outdoors. Walking is recommended, so long as you take care to avoid crowds and small indoor spaces.



Eat well and enjoy a well-balanced diet!

● **Let's eat well-balanced meals!**

Be sure to have some variety in your diet. Eat well, with balanced nutrition, and keep your body in good shape.

A good diet also helps maintain immunity. In addition, it is important to ensure you're consuming proper amounts of protein, an important nutrient found in bodily structures (especially the muscles).



Keep your mouth clean

Chew firmly and chat every day if possible

● **Brush your teeth after every meal and before you go to bed!**

Keeping your mouth clean is an effective way of preventing infections, such as the flu. Make sure you brush your teeth after every meal and before going to bed. Cleaning your dentures is also very important.

● **Keep the muscles around your mouth. Chatting is also important for this.**

Inactivity of the mouth can be a big problem. Eat three meals a day, and be sure to chew them well. If you're able to chew, it's also important to consciously choose foods that are a bit chewy. A life of self-restraint reduces our chances to talk to others, which can reduce the power of our mouth muscles. Use the phone. Be mindful and capitalize on chances for a conversation. Humming and speaking fast are also recommended.



It's important to support each other with family and friends!

● **Avoid loneliness! Communicate with others in your neighborhood or by phone.**

Socializing with people is very important in times such as this. It might be difficult to leave the house right now, so let your family and friends support and consciously interact with each other. Even small greetings and conversations are important. Sharing correct and up-to-date information regarding new coronavirus infections can also help you avoid trouble and anxiety.

● **Support in shopping and daily life. Offer mutual support in times of trouble.**

Call for help when you need assistance gathering groceries, shopping for household items, getting to the hospital, etc. Think about your partner. It's important to discuss issues such as this in advance.



Let's encourage all families who have older parents to do the same!

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Figure 1 Schema made by the Japan Geriatric Society.

provide support for activities of daily living in older people with disabilities and psychological problems.⁹ These innovative strategies can create a new geriatrics in parallel with traditional face-to-face care for the elderly.


Maintaining social connectivity will help us remain healthy in the current pandemic situation. On April 16, Captain Tom Moore, a 99-year-old army veteran, walked the last 10 laps from 100 backyard lengths as he reached his 100-year-old birthday to raise money for the National Health Services in the UK.¹⁰ This gesture encouraged people worldwide and conveyed to the elderly “You’ll never walk alone,” as he sang. It is necessary to change the message from “just stay home” to “avoid close contact and maintain a physically, mentally, and socially active lifestyle.”

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Drug interactions with potential antivirals used for COVID-19 in older persons

Dear Editor,

Older persons are increasing in proportion globally, and retain important social and economic roles. Unfortunately, they experience disproportionately high mortality from severe coronavirus disease 2019 (COVID-19) infection.¹ Cunningham *et al.* have succinctly highlighted the challenges and potential treatment options.² We feel that these options have specific considerations in older adults. To optimize clinical care, we need to be prudent in all areas: clinically, pharmacologically and ethically. In particular, we will highlight the impact of polypharmacy on older adults when potential antivirals for COVID-19 are used.

Although no specific antivirals for COVID-19 infections have been proven to be effective in randomized controlled trials, off-label, compassionate and experimental use of several drugs are common, especially for severe infection.³ The risks for severe COVID-19 infection and mortality concurrently increase with age. Similarly, chronic obstructive pulmonary disease, cardiovascular diseases, cerebrovascular diseases, cognitive disorders, chronic

kidney disease, chronic liver disease, hyperlipidemia, hypertension, diabetes mellitus and hypothyroidism are all more common in older persons. Multimorbidity interacts significantly with frailty.⁴ Not surprisingly, treatment of multiple comorbid conditions necessitates the use of multiple medications.

In the presence of both polypharmacy and multimorbidity, antiviral administration in older adults carries an elevated risk of harm from drug–drug and drug–disease interaction. With regard to drug–drug interactions, we show several commonly-used medications in older persons and their interaction with antiviral medications repurposed for COVID-19 (Table 1).^{5,6} In addition, aging involves progressive organ impairments that affect drug clearance and pharmacokinetics. For instance, in the presence of moderate-to-severe hepatic impairment, antiviral medications should be avoided. Similarly, in the presence of severe renal dysfunction, i.v. remdesivir is to be used with caution in view of the accumulation of excipient sulfobutylether- β -cyclodextrin. Whereas chloroquine and hydroxychloroquine might require dose attenuation, as they have some clearance through the kidneys.