SUNTEXT REVIEWS

SunText Review of Virology
ISSN: 2766-5003

Open Access
Commentary Article
Volume 2:2

Acute Decline of New COVID-19 Cases during autumn 2021 In Japan

Bando H[1,2,*]

[1]Tokushima University / Medical Research, Tokushima, Japan
[2]Integrative Medicine Japan (IMJ), Shikoku Island division, Tokushima, Japan

[*]**Corresponding author:** Bando H, Tokushima University, Medical Research, Tokushima, Japan; Tel: +81-90-3187-2485; E-mail: pianomed@bronze.ocn.ne.jp

Received date: 07 November 2021; **Accepted date:** 09 November 2021; **Published date:** 12 November 2021

Citation: Bando H (2021). Acute Decline of New COVID-19 Cases during autumn 2021 In Japan. SunText Rev Virol 2(2): 122.

DOI: https://doi.org/10.51737/2766-5003.2021.022

Abstract

Regarding COVID-19 pandemic, large waves have been found in several months. Statistic data are presented from John Hopkins University (JHU) every day. Japan has minus excess mortality until now and sharply decreased new cases in September-November, 2021. In November, new cases per day show 19 in Tokyo and 209 in Japan. Related characteristic factors include mild lockdown, basic infection control, public perspective thinking and high vaccination rate in Japan. Elderly (> 65 years) already had twice vaccination in 90.8% at present. Some COVID-19 factors include seasonal effects, 2-month cycle, changed pathogenicity and the ethnic difference of ACE1 insertion/deletion polymorphism.

Keywords: COVID-19 pandemic; John Hopkins University (JHU); Minus excess mortality; High vaccination rate; ACE1 insertion/deletion polymorphism

Introduction

Regarding COVID-19, various situation has been observed in many countries [1]. Japan has presented minus excess death in 2020, and held the Olympics on July 23, 2021 [2,3]. After that, highest COVID-19 cases were found in Aug 20, the Paralympics was closed on Sept 5 and cases were acutely decreased in October to November [4]. For statistical data of COVID-19, John Hopkins University (JHU) have presented current results every day [5]. The world infection situation is summarized [5]. COVID-19 has shown several strain mutations, and recent common type is Delta strain. As to the new COVID-19 cases, Japanese government has continued to report the current status, in which several waves can be observed [6]. The peak of the 5th wave was seen on August 20, but it decreased sharply in August. Regarding Tokyo, the capital of Japan, statistic result is shown. It dropped to 49 cases per day on October 11. After that, new case number in average (/day) decreased as 34, 24 and 19 for 3 weeks, respectively. On November 7, the number of deaths in Japan fell to zero after 15 months (Figure 1).

Similar to 50 states in United States, Japan has 47 prefectures. In each prefecture, the number of new COVID-19 cases have been checked every day for long period [6]. The infection situation is summarized on Nov 6, 2021 period. Total new cases were 241 in Japan with Tokyo 29, Osaka 39. Out of 47 prefectures, 20 prefectures showed none (Figure 2).

Currently, the number of new cases in Japan has been decreasing sharply. Detail statistic and epidemiological study has been continued [7]. Regarding conventional matters related to this situation, several points characteristic of Japan would be summarized in the following.

- Mild lockdown: It is not official compulsory strategy, but government asks people to control the activity [6].
- Basic infection control: People continue properly masks and hand washing for long. Government, companies, school and all other organizations are usually considering effective measures, and everyone is always cooperating for restricted lifestyle.
- High vaccination rate: Japanese people have public mind and consideration to others, and then people are willing to take vaccination [8]. Japan has 120 million population. Half Japanese has completed twice vaccination on Sept 13, and

60% completed on Oct 4, 2021 [6]. The number and ratio of vaccination on Nov 5, 2021 is as follows: the first vaccination was done in 98,487,956 (77.8%) and the second completion was 92,556,990 (73.1%). Regarding elderly (>65 years old), the first was 32,769,460 (91.6%) and the second was 32,480,692 (90.8%). Thus, most elderly people have been vaccinated so far, and the younger generation is currently vaccinated.

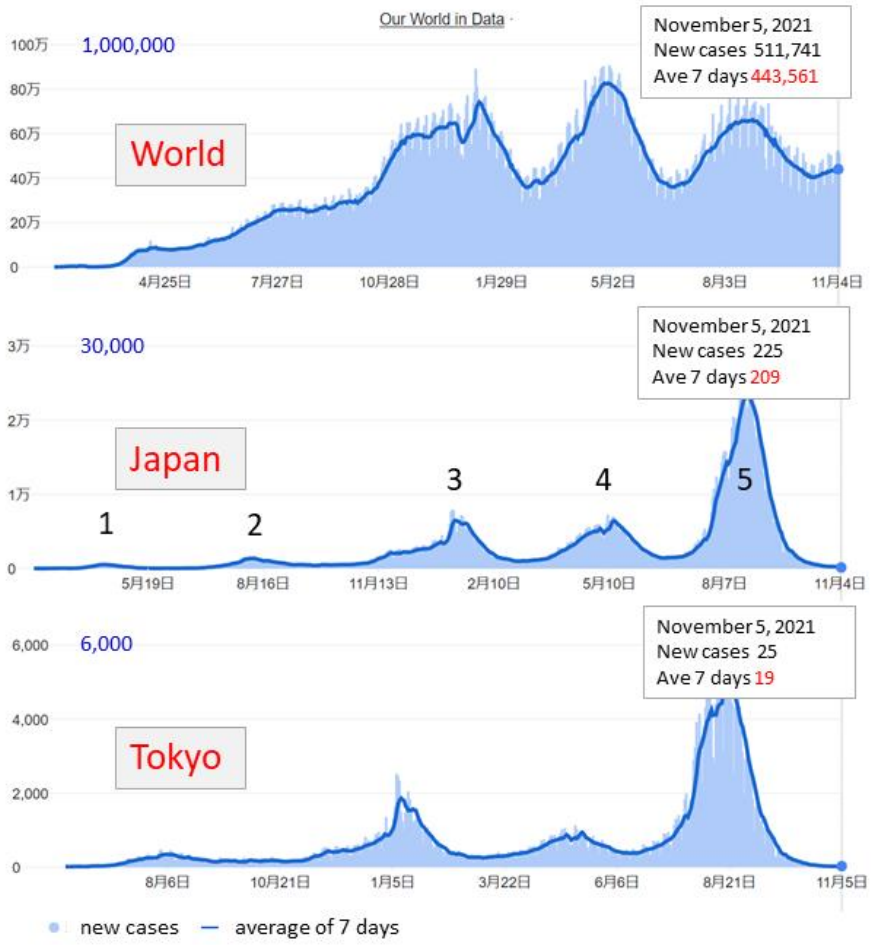

Figure 1: *Data of new COVID-19 cases from the world, Japan and Tokyo*
1a: New cases fluctuate during 400-800 thousand per day.
1b: Japan has 5 infection waves about every several months.
1c: Tokyo has less than 50 new cases for 3 weeks.

Drastic decrease in COVID-19 infection in Japan has been evaluated as a mystery from overseas, and several hypotheses have been found [9].

- Seasonal effects: For seasonal changes, similar declines are also observed in the United States and Germany. In these countries, infection spreads frequently in summer and winter. During them, air conditioning is used and windows are not opened frequently. In contrast, people tend to ventilate more and go outdoors in spring and autumn.
- 2-month cycle: In many countries, COVID-19 has shown some waves with increasing and decreasing. The phenomena were said to be observed every 2 months [10]. Some difference may exist between the original strain and current Delta strain. In previous strains, one patient infected another 2.5 people in average. On the other hand, Delta strains seem to infect 5-9 people [11]. Such highly infectious Delta strains can spread rapidly and then may converge rapidly.
- Pathogenicity: There is a possibility that the nature of the Delta strain may be mutated so far [12]. In other words, the infectivity of the Delta strain was certainly strong at the beginning. However, the infectivity and the pathogenicity (the ability to cause the disease) may be weakened since then. It is certain that many people infected the Delta strain, but they may not been tested because of asymptomatic.

A latest report has shown impressive perspective [13]. The renin–angiotensin–aldosterone system (RAAS) seems to play a crucial role in SARS-COV-2 infection [14]. For one of the main components of RAAS, it would be most striking that ACE2 is a prerequisite for SARS-COV-2 infection [15].

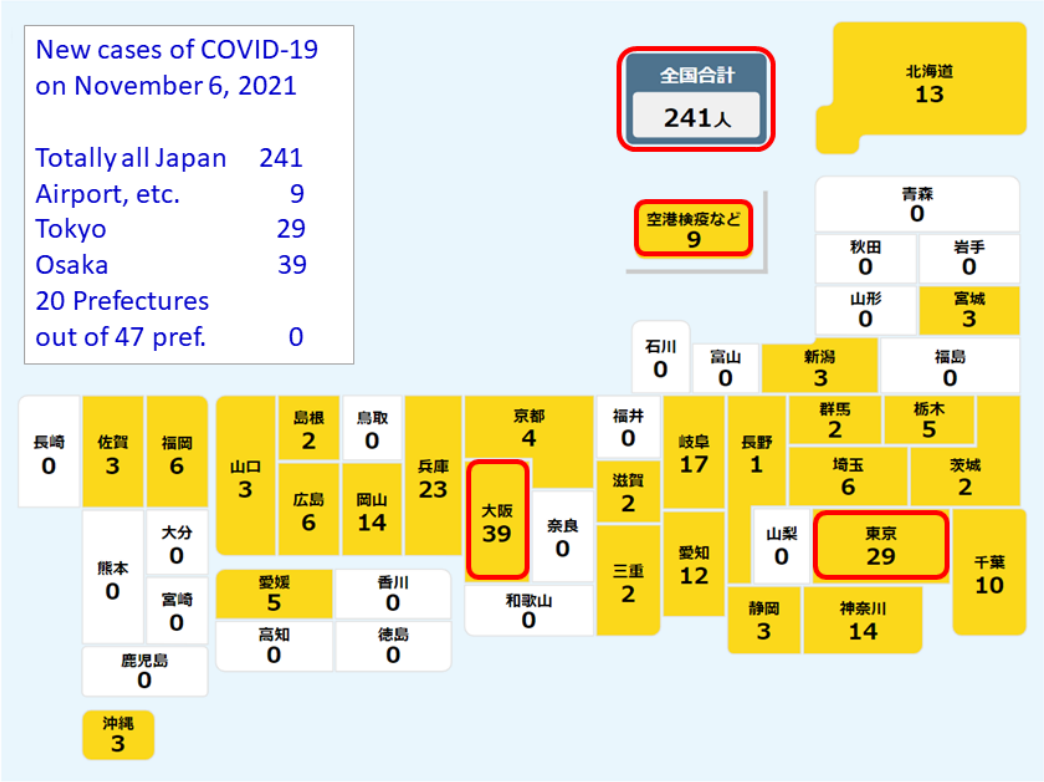

Figure 2: *New COVID-19 cases from 47 prefectures in Japan (Nov 6, 2021).*

Some investigators showed the association between phenotypic expression of COVID-19 and a homolog of ACE2 (polymorphism of ACE1 gene), in particular with its severity [16]. For explaining apparent mortality difference of Western and East Asian people, the ethnic difference of ACE1 insertion (I)/deletion (D) polymorphism seems to be involved [13]. Consequently, the investigation on ACE1 genotype will bring new clues to diagnosis, pathophysiology and treatment for SARS-CoV-2 in the future [17]. In summary, latest data and related topics for COVID-19 were described [18]. Some description will be hopefully useful for clinical practice and research of COVID-19 in the future.

Conflicts of interest

None.

Funding

None.

References

1. Woolf SH, Chapman DA, Sabo RT, Zimmerman EB. Excess deaths from COVID-19 and other causes in the US, March 1, 2020, to January 2, 2021. JAMA. 2021; 325: 1786-1789.
2. Bando H. Fewer annual deaths in Japan with negative excess mortality for COVID-19. Asp Biomed Clin Case Rep. 2021; 4: 84-87.
3. Tokyo Olympic and Paralympic.
4. Ito K, Piantham C, Nishiura H. Predicted dominance of variant Delta of SARS-CoV-2 before Tokyo Olympic Games, Japan. 2021. Euro Surveill. 2021; 26: 2100570.
5. John Hopkins University. The data showed 249,642,958 cases and 5,046,783 deaths on November 7, 2021.
6. MHLW of Japan.
7. Nagata S, Nakaya T, Adachi Y, Inamori T, Nakamura K, Arima D, et al. Mobility change and COVID-19 in Japan: Mobile data analysis of locations of infection. J Epidemiol. 2021; 1-5.
8. Yoda T, Katsuyama H. Willingness to receive COVID-19 vaccination in Japan. Vaccines. 2021; 9: 48.

9. Barai MK, Dhar S. COVID-19 Pandemic: Inflicted costs and some emerging global issues. Global Bus Review. 2021; 10: 1-20.
10. Covid, in Retreat.
11. COVID-19 vaccine breakthrough case investigations team. COVID-19 Vaccine breakthrough infections reported to CDC - United States, MMWR Morb Mortal Wkly Rep. 2021; 70: 792-793.
12. Bernal JL, Andrews N, Gower C, Gallagher E, Simmons R, Thelwall S, et al. Effectiveness of Covid-19 Vaccines against the B.1.617.2 (Delta) Variant. N Engl J Med. 2021; 385: 585-594.
13. Yamamoto N, Nishida N, Yamamoto R, Gojobori T, Shimotohno K, Mizokami M, et al. Angiotensin–Converting Enzyme (ACE) 1 Gene Polymorphism and Phenotypic expression of COVID-19 symptoms. Genes. 2021; 12(: 1572.
14. Hoffmann M, Weber HK, Schroeder S, Kruger N, Herrler T, Erichsen S, et al. SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. Cell. 2020; 181: 271-280.
15. Tang Q, Wang Y, Ou L, Li J, Zheng K, Zhan H, et al. Downregulation of ACE2 expression by SARS-CoV-2 worsens the prognosis of KIRC and KIRP patients via metabolism and immunoregulation. Int J Biol Sci. 2021; 17: 1925-1939.
16. Yamamoto N, Ariumi Y, Nishida N, Yamamoto R, Bauer G, Gojobori T, et al. SARS-CoV-2 infections and COVID-19 mortalities strongly correlate with ACE1 I/D genotype. Gene. 2020; 758: 144944.
17. Nguyen HT, Zhang S, Wang Q, Anang S, Wang J, Ding H, et al. Spike glycoprotein and host cell determinants of SARS-CoV-2 entry and cytopathic effects. J Virol. 2020; 95: 2304-2320.
18. Bando H. Latest data of COVID-19 influencing worldwide from John Hopkins University. Int J Case Rep Clin Image. 2021; 3: 157.