Beautiful Harmony of the Japanese Precious Healthcare
Legacies for the New Imperial Era

Hidehiro Kaneko, MD; Hiroyuki Morita, MD; Issei Komuro, MD

The new Imperial era, Reiwa, started in May, 2019. After World War II, Reiwa is the third Imperial era following Showa and Heisei. In each era, we had specific healthcare problems in cardiovascular medicine and implemented preventive strategies against them. Furthermore, nationwide healthcare policies such as a universal healthcare insurance system (kaihoken) and health check-up system largely contribute to overcoming these problems. Here, we summarize the specific issues in cardiovascular medicine and nationwide strategies policies against them in each era. We also describe what we should do in the new Imperial era from the cardiovascular viewpoint.

Key Words: Cardiovascular medicine; Heart failure; Nationwide healthcare policies; New Imperial era

New Era of Japan and Cardiovascular Medicine

When Emperor Naruhito succeeded his father, Akihito, the new Imperial era, Reiwa (meaning beautiful harmony), commenced on May 1, 2019 in Japan. One month prior to this historic moment, the president of the Japanese Circulation Society, Professor Komuro, announced the Yokohama Declaration at the 83rd Annual Scientific Meeting of the Japanese Circulation Society. He told that, in conjunction with the enactment of the Stroke and Cardiovascular Control Act, which is the first ever nationwide legal policy against stroke and cardiovascular diseases, the Yokohama Declaration symbolically heralded a new era in cardiovascular medicine. The Yokohama Declaration emphasizes the importance of preventive cardiology in reducing the risk of heart failure (HF). The number of patients with HF is rapidly increasing in developed countries and is quickly becoming a global healthcare issue. After World War II, Reiwa is the third Imperial era following Showa and Heisei. In each era, we have had specific healthcare problems and have implemented nationwide prevention strategies.

The Era of Showa

In the middle of the era of Showa (1950–1960s), mortality due to stroke was extremely high in Japan. Uncontrolled hypertension owing to excessive salt intake was regarded as the critical reason therefor. A unique healthcare system, kaihoken, which was launched in 1961, assures access to health services for the entire Japanese population. This system contributed significantly to the increased penetration of antihypertensive medications for affected patients. Additionally, nationwide campaigns to prevent hypertension and stroke through population-wide health education were launched in the 1960s. Based on these strategies, occupational and community health legislation was enacted, and annual health check-ups for primary and secondary prevention became common. Furthermore, over 3 million Japanese citizens undergo voluntary annual health check-ups, termed Ningen (human in Japanese) Dock, including advanced examinations such as echocardiography, computed tomography, and magnetic resonance imaging. Through health check-ups and various healthcare education programs, restriction of dietary salt intake was strongly recommended. Both the universal health coverage and the widespread health check-up system were brilliant properties of the Showa era, in the sense that penetration of antihypertensive medications and reduced salt intake contributed significantly to the decreased stroke mortality rate in 1980s; the Showa era ended in 1989.

The Era of Heisei

While mortality due to stroke decreased in the era of Heisei, ischemic heart disease (IHD) became prevalent. Epidemiologically, Japanese Americans were more susceptible to IHD than were Japanese living in Japan, suggesting the importance of the healthy lifestyle. In the era of Heisei, an increase in lifestyle-related diseases that induce IHD became a public healthcare issue. Accordingly, the Japanese
Ministry of Health, Labour and Welfare (MHLW) launched Specific Health Checkups (SHC) and Specific Health Guidance (SHG), which is the annual health screening and promotion service, as part of the national health insurance system in 2008. The aim of SHC and SHG is to detect lifestyle-related diseases, particularly metabolic syndrome, and to implement early therapeutic interventions to reduce the burden of lifestyle-related diseases. To the best of our knowledge, SHC and SHG are the world’s first nationwide legal policy for preventive cardiology. Now, 10 years has passed since the launch of SHC and SHG and we should cultivate this epoch-making and experimental system to reduce the burden of lifestyle-related diseases and consequent cardiovascular diseases.

**New Era of Reiwa**

In the era of Reiwa, we must combat the HF pandemic. Thanks to the healthcare properties in Japan, life expectancy has increased dramatically through the eras of Showa and Heisei, and the percentage of the elderly in the population has increased fourfold, from 6% in 1960 to 23% in 2010. In 2016, 27% of the Japanese population was >65 years old. This rate of growth of the aging population is the fastest worldwide, and Japan has the highest proportion of elderly people relative to its total population, globally. On the other hand, the increase in lifestyle-related diseases in middle-aged and young adult generations caused by an industrialized lifestyle has become a serious concern. HF is obviously a considerable problem in this era, considering that aging and lifestyle-related diseases both play a pivotal role in the development thereof.

Although Japan has the longest life expectancy, there is a discrepancy of approximately 10 years between life expectancy and healthy life expectancy. Stroke and cardiac diseases, including HF, are the most important reasons for this large discrepancy, causing a significant burden for not only patients but also their families supporting and caring for the patients. Further, considering the declining birthrate and aging population in Japan, the increase in medical expense is also a serious socioeconomic burden. Today, annual medical expenses in Japan exceed 40 trillion yen (US$356 billion), and one-third of the medical expenses are used for the elderly population aged ≥75 years. Medical expenses for cardiovascular diseases including HF account for approximately 20% of the total medical expenses, and exceed that for malignant neoplasms. Taking this into consideration, we must immediately take action to address the impending HF pandemic.

Preventive cardiology is important in the battle against HF as well as stroke and IHD. Similar to the ACCF/AHA stages of Heart Failure, the Japanese Circulation Society suggests 4 stages of HF (Figure) in their latest guideline. We can take many preventive strategies for each stage of HF, including prevention of the development of structural heart disease (from Stage A to B); prevention of the development of symptomatic HF (from Stage B to C), considered primary prevention; and prevention of repeated HF admission (for patients categorized in Stage C and D), considered as secondary prevention. However, the most important and effective preventive strategy is risk factor modification for patients categorized in Stage A as well as
prevention of lifestyle-related diseases such as obesity, metabolic syndrome, hypertension, diabetes mellitus, dyslipidemia, and chronic kidney disease, which is considered as primary prevention, because it is difficult to break the vicious cycle of HF once structural heart disease develops. The importance of preventive cardiology for HF should be strongly recognized even more in this era.

From this point of view, health check-ups, such as SHC and SHG, provide an ideal opportunity. Nevertheless, approximately half of individuals eligible to undergo SHC and SHG do not do so. Such individuals are prone to inadequate health awareness and are at high risk of lifestyle-related diseases and consequent cardiovascular disease, including HF. As the target population for SHC and SHG is adults between 40 and 75 years old, young adults in their 20s or 30s are excluded. However, cardiovascular disease in young adults is drawing clinical interest globally, and the optimal management strategy of lifestyle-related diseases and subsequent cardiovascular diseases for young adults should be established through the perspective of preventive cardiology as well.

Taken together, there are many problems to be solved to overcome the HF pandemic. Furthermore, expanding the robust evidence-based medicine in preventive cardiology for HF is required. From this point of view, Japanese specific healthcare properties, such as universal health coverage, mandatory health check-ups, voluntary health check-ups (Ningen Dock), and SHC and SHG, are potential advantages. Combining these nationwide big basal datasets can lead to establishing the ideal database for preventive cardiology. Additionally, state-of-the-art techniques, such as artificial intelligence, mobile applications, telemedicine, and remote monitoring etc., can provide us with the insight required to develop the optimal strategy for the HF pandemic.

Conclusions

The name of the new Imperial era, Reiwa, means beautiful harmony. In keeping with this, we should harmonize beautifully the precious legacies of the specific Japanese healthcare system with cutting edge technology to overcome the HF pandemic approaching in this new Imperial era.

Source of Funding

This study was self-funded.

Disclosures

Research funding and scholarship funds (H.K.) from Medtronic Japan Co., Ltd., Abbott Medical Japan Co., Ltd., Boston Scientific Japan Co., Ltd., and Fukuda Denshi, Central Tokyo Co., Ltd.

References

1. Akazawa H, Toko H, Harada M, Ueda K, Kodera S, Kiyosue A, et al. Overview of the 83rd Annual Scientific Meeting of the Japanese Circulation Society: Renaissance of cardiology for the creation of future medicine. Circ J 2019; 83: 1829–1835.
2. Nakayama H, Minematsu K, Yamaguchi T, Miyamoto S, Isobe M, Komuro I, et al. Approval of Stroke and Cardiovascular Disease Control Act in Japan: Comprehensive nationwide approach for prevention, treatment, and patients’ support. Int J Stroke, doi:10.1177/1747493019873549.
3. Komuro I, Kaneko H, Morita H, Isobe M, Nakayama H, Minematsu K, et al. Nationwide actions against heart failure pandemic in Japan: What should we do from academia? Circ J 2019; 83: 1819–1821.
4. Ikegami N, Yoo BK, Hashimoto H, Matsumoto M, Ogata H, Babazono A, et al. Japanese universal health coverage: Evolution, achievements, and challenges. Lancet 2011; 378: 1106–1115.
5. Robertson TL, Kato H, Rhoads GG, Kagan A, Marmot M, Syme SL, et al. Epidemiologic studies of coronary heart disease and stroke in Japanese men living in Japan, Hawaii and California: Incidence of myocardial infarction and death from coronary heart disease. Am J Cardiol 1977; 39: 239–243.
6. World Health Organization. World health statistics, 2015. https://www.who.int/docs/default-source/gho-documents/world-health-statistic-reports/world-health-statistics-2015.pdf?sfvrsn=afb0629f_2 (accessed November 24, 2019).
7. Yancy CW, Jessup M, Bozkurt B, Butler J, Casey DE Jr, Drazner MH, et al. 2013 ACCF/AHA guideline for the management of heart failure: A report of the American College of Cardiology Foundation/American Heart Association Task Force on practice guidelines. Circulation 2013; 128: e240–e327.
8. Tsutsui H, Isobe M, Ito H, Ito H, Okumura K, Ono M, et al; on behalf of the Japanese Circulation Society and the Japanese Heart Failure Society Joint Working Group. JCS 2017/JHFS 2017 guideline on diagnosis and treatment of acute and chronic heart failure: Digest version. Circ J 2019; 83: 2084–2184.