Antipsychotic Prescriptions for Patients with Dementia: The Strengths and Weaknesses of the National Health Insurance System of Taiwan

The National Health Insurance System of Taiwan

Taiwan is an island in Southeast Asia with a population of about 23 million people, of whom 15.28% were aged 65 years or more in 2019 (www.gis.ris.gov.tw/dashboard.html?key=B02). The mean life expectancy in 2019 was 77.69 years for males and 84.23 years for females (www.moi.gov.tw/stat/english/node.aspx?sn=7317). It is one of the fastest aging countries in the world, and the number of people aged over 65 years is expected to reach 40% by 2050. In 1995, a single-payer National Health Insurance (NHI) System was implemented in Taiwan. The system is characterized by having the following strengths – universal population coverage, comprehensive healthcare services, good accessibility, short waiting time, low cost, and having a national data collection system [1]. The coverage rate is currently about 99.9% of the population. Coverage includes almost all kinds of healthcare, from Western medicine to traditional Chinese medicine, the common cold to organ transplantation, and preventive cancer screening to home care for the elderly. Anyone covered by the system can see any physician at any level of clinic directly without a referral (but with a different co-payment). The quality of care is up to international standards, and the overall satisfaction rate is high (89.7% in 2019) (www.newtalk.tw/news/view/2019-11-26/332081). Of note, the NHI system has also established a national data collection system to produce the NHI research database (NHIRD) that has been used to identify many healthcare problems such as safety issues related to antipsychotic treatment for dementia.

One Weakness of the National Health Insurance Healthcare System: More Patients, but Less Time

One of the weaknesses in the NHI healthcare system is that general practitioners usually have to see more patients during a morning clinic to maintain an above-average income. The average number of outpatient clinic visits was 16.7 visits per capita in 2018 (www.dep.mohw.gov.tw/dos/cp-4648-50664-113.html), which is much higher than those in many developed countries (www.doi.org/10.1787/1a1ac034-en). It means that a physician is pressured to see more patients during each clinic session (usually more than 25 patients in about 3 - 4 hours). This makes it especially difficult for a physician to deal with demented patients with behavioral disturbances, since those patients usually need more time for assessment and management. One of the consequences is that physicians and families tend to reach an agreement to continue the use of medication to maintain a stable situation, rather than spending time talking about other alternative treatments such as nonpharmacological treatments.

To Investigate the Prescription and Risk of Antipsychotic Drugs in Patients with Dementia Using the NHIRD

Fortunately, the NHI system also provides a mechanism to examine the potential problems within the system. Several studies based on the NHIRD have explored the issue of antipsychotic prescriptions for patients with dementia. An NHIRD-based study found that antipsychotic prescriptions for the elder adult patients making visits for dementia increased slightly from 25.5% to 26.5% between 2005 and 2013, among which the prescriptions of the first-generation antipsychotics were decreased from 7.8% to 3.3% while that of second-generation antipsychotics were increased from 17.0% to 22.2% [2]. Of note, the US Food and Drug Administration (US FDA) issued a black box warning on the use of antipsychotics for dementia about the potential risks of mortality in 2005, and the overall antipsychotic prescription tendency was decreased in the USA, the United Kingdom, and France after 2005 [3-5]. The different trends of antipsychotic prescriptions in Taiwan compared to other developed countries may be related to time constraints under Taiwan's healthcare system and related policies.

Because the US FDA warning on the increased risks of stroke and death in patients with dementia was mostly based on studies from Western countries, whether these risks are applicable to Taiwanese patients is unknown. Several research teams have examined these questions using the NHIRD. One case-crossover study on 14,584 patients with incident stroke from 1998 to 2007 reported that, after adjusting for possible confounders, antipsychotics have been found to be associated with an increased odds ratio (OR) for stroke in both demented (OR = 2.59) and nondemented elder adults (OR = 1.40) [6]. Importantly, the risk of stroke has shown a dose-dependent relationship (a higher dose leading to a higher risk), and a stroke is more likely to occur within the first month of use. This finding is compatible with those from other Western studies [7, 8]. Interestingly, the risk of stroke is found to be associated with antipsychotics with high M_1 muscarinic and alpha-2 adrenergic affinity. Consistent with these findings, another population-based follow-up study on 2,243 patients with

dementia and 6,714 matched subjects showed that dementia patients have a two-fold greater risk of developing stroke within five years of diagnosis compared to age- and gender-matched subjects without dementia [9]. In addition, the use of antipsychotics among patients with dementia further increases the risk of stroke by 1.17-fold compared to patients who did not receive antipsychotic treatment (95% confidence interval = 1.01–1.40). By adopting a similar methodology, another case-crossover study examined the relationship between the use of antipsychotics and acute myocardial infarction (AMI) based on 56,910 patients with dementia, schizophrenia, or mood disorders first hospitalized or visiting an emergency room for AMI from 1999 to 2009. The results showed that the use of antipsychotics increases the risk of AMI not only in patients with dementia (OR = 2.97) but also in patients with schizophrenia (OR = 2.21) or mood disorder (OR = 2.14) [10]. The risk of AMI is also in a dose–response manner and is highest within the first month of the prescription. The striking similarities among these findings lend support to the notion that antipsychotic drugs are likely to raise the risks of morbidity and mortality in patients with dementia and may even increase the risks for patients without dementia.

Collaborative Efforts between the Professional Organizations and Government

A 2012 national epidemiological survey showed that the prevalence of dementia in those aged 65 years and above was increased to 8% compared to 4% in 2004 [11]. Given a situation where physicians may not have enough time to help the patients with behavioral disturbances, more action should be taken by professional organizations. The Taiwanese Society of Geriatric Psychiatry has developed a series of educational programs on the identification and management of behavioral and psychological symptoms of dementia since 2010 and has recently published a behavioral management guide for psychiatrists and general practitioners focusing on geriatric patients. This guide was translated from "Optimising treatment and care for people with behavioral and psychological symptoms of dementia: A best practice guide for health and social care professionals" (published by the UK Alzheimer's Society). We hope that clinicians will be more prudent in prescribing antipsychotic drugs through such efforts, thereby preventing unnecessary harm. In addition, nonpharmacological management should be strengthened inside the NHI system or augmented from outside through non-NHI services.

Currently, nonpharmacological treatments such as family education/support programs are discouraged and not well covered by the NHI system. The Taiwan Alzheimer Disease Association, in cooperation with other societies such as the Taiwan Dementia Society and Taiwanese Society of Geriatric Psychiatry, has been working together to persuade the government to launch a series of nonpharmacological treatment programs to help dementia patients and their families over the past 10 years. In 2013, the Ministry of Health and Welfare published the first national policy guidelines for the prevention and management of dementia. Based on the guidelines, the dementia care plan 1.0 (2013–2016) was launched. In 2017, the government launched dementia care plan 2.0 (2018–2025) (www.mohw.gov.tw/cp-139-541-2.html), which was in steps with *WHO's Global Action Plan on the Public Health Response to Dementia* 2017–2025. Accordingly, seven strategies have been adopted:

- to recognize dementia as a public health priority
- to raise dementia awareness and friendliness
- to reduce the risk of dementia
- to provide dementia diagnosis, treatment, care, and support
- to provide support for dementia carers
- to build information system for dementia
- to promote dementia research and innovation.

Through those strategies, many actions have been taken since then and resulted in improvement of the supportive psychosocial system for dementia patients and carers, including (but not limited to) 350 support centers for people with dementia and their families, 73 integrated dementia care centers, 367 daycare centers, 12 group homes, and 59 small-scaled multi-function service established by the end of 2018 (www.mohw.gov.tw/cp-4344-46546-2.html). Until July 2019, there were 1999 dementia-friendly stores, 137 dementia-friendly churches, 409 dementia-friendly hospitals, 65 dementia-friendly organizations, and 105 dementia-friendly banks. The government also established a telephone consultation service, which is helpful for caregivers who need help but do not get enough information from physicians. All of those measures can directly or indirectly help caregivers manage behavioral disturbances associated with dementia.

Balanced Consideration between Pharmacological and Nonpharmacological Treatment

Finally, despite the safety concerns about antipsychotic agents in dementia, current evidence does not exist to confidently recommend alternative pharmacotherapy to replace antipsychotics, especially when psychotic symptoms are severe and disturbing [12]. The general international recommendations are to prescribe antipsychotics mainly for those with significant distressing symptoms after nonpharmacological treatments have been tried but shown to be ineffective. The most appropriate use of antipsychotic drugs and other psychotropic agents in patients with dementia remains a challenge. The NHI system has been successful in providing many services for many people. But there is still room for improvement. Hopefully, vulnerable elder adult patients with dementia can obtain better care and feel safer under a balanced management system incorporating both pharmacological and nonpharmacological treatments through joint efforts from professionals, nonprofessional organizations, the government, researchers, clinicians, and caregivers.

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Conflicts of Interest

All authors report no conflicts of interest relevant to the subject of this article.

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