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Editorial

The economic burden of hip fractures in Asia

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An osteoporotic hip fracture may cause a significant healthcare impact not only on an individual level but also on the public medical system as well as by the whole society. A study by the Asian Federation of Osteoporosis Societies (AFOS) showed that the number of hip fracture cases will increase from 1.1 million in 2018 to 2.6 million in 2050. This is an osteoporosis tsunami, with a 2.3-fold increment [1]. Therefore, the rapidly increased economic burden should be of concern, especially in an aging society.

The direct costs of hip fractures include inpatient hospitalization, surgery, implants for fixation, joint prostheses, emergent medical service, outpatient care, etc [2]. According to AFOS reports, Japan had the highest direct cost of each hip fracture, at 27599 United States dollar (USD), followed by 8832 USD in Hong Kong, 6917 USD in Singapore, 6000 USD in Malaysia, and 5776 USD in Taiwan. The direct medical cost was below 5000 USD for each case in China, Korea, Thailand, and India [1]. Compared with 50508 USD for each case in the United States of America [3], the medical cost for hip fractures for a single patient was much lower in Asian countries. However, with a rapid increase of an aging population in Asia, the direct medical costs for osteoporotic fractures in Asia reached 9.5 billion USD in 2018 and are expected to amount to 15 billion USD in 2050 [1].

In their article on 'Osteoporosis and Sarcopenia', Cortez et al [4] reported the economic burden of hip fractures based on the results of Orthogeriatric Multidisciplinary Fracture Management Model and Fracture Liaison Service (FLS) in a tertiary government hospital in Manila, Philippines. The results revealed that fragility hip fractures had a significant financial impact in the Philippines. The estimated annual medical cost for hip fractures was 22.6 million USD in total. The authors further reported that an early intervention of medical care for hip fractures would reduce the overall medical expenditure.

In addition to direct medical costs, direct nonmedical costs and indirect costs should be taken into account. Direct nonmedical costs include transportation, special aid equipment, home/car modifications as well as community-based care service. Indirect costs consist of productivity loss due to absence from work and costs of unpaid care by family members or other persons. Due to the complexity of the nonmedical costs and indirect costs, the well-designed studies or ideal models for estimation are still lacking. Though the Singapore study [2] and studies from Europe [5,6] showed that direct medical costs were higher than indirect costs, the indirect costs would far exceed direct costs as a commonsense.

There are several strategies to reduce the burden of osteoporotic hip fractures. The primary goal is to increase public awareness of osteoporosis and reduce the incidence of hip fractures. Asian governments should make effective efforts and provide convenient resources for the management of osteoporosis. Promoting the proper use of anti-osteoporosis drugs with adequate adherence will reduce the burden of osteoporotic fractures. However, the treatment of osteoporosis is still alarmingly suboptimal [7]. A budget impact analysis of osteoporosis medications for primary prevention of fractures in Taiwan revealed that the increased budget for osteoporosis medication can be successfully compensated due to savings in fracture treatment costs in the future [8]. It was found to be cost-effective to pay for anti-osteoporosis treatment as primary prevention when we factored in the indirect medical costs, family burden, and huge social costs.

To reduce re-fracture rate by promoting FLS is also critical. The optimal FLS programs help primary care physicians continuously to prescribe treatment and ensure convenient service. The evidence to support FLS in Asia remains limited. It is urgent to establish new FLS, improve the existing systems and determine the impact of FLS for Asian healthcare systems [9]. The introduction of artificial intelligent (AI) healthcare information systems may help to reduce manpower demand and implementation costs [10]. Besides, nationwide reimbursement of FLS should be encouraged. International cooperation for developing ideal models of service should be enhanced to further advance osteoporosis management.

Although the diagnostic methods, treatment of osteoporosis, and fracture prevention have made great progress over recent years, the current reports show that hip fracture is still an important public health issue in Asia. Healthcare strategies in Asia should be targeted in reducing the burden of osteoporotic hip fractures. Further studies are needed to better understand the financial consequences of hip fractures and enable more preventive acts to be undertaken in different countries or regions.

CRediT author statement

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Conflicts of interest

The authors declare no competing interests.

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