

Ageing Population: A Neurological Challenge

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The accelerated ageing of the population is an ongoing worldwide phenomenon with major implications in many sectors including health. According to the *World Population Prospects: the 2017 Revision*, the number of people aged over 60 will more than double by 2050 – from 962 million in 2017 to 2.1 billion in 2050 [1]. The oldest segment of the population, that is, people over 80 years old, is expected to triple over this period, from 137 million in 2017 to 425 million in 2050. Neurology is a medical discipline that will be particularly impacted by these rapid demographic changes, given the close relationship between age and the incidence of many neurological disorders. Together with the recently published article by Beghi and Giussani [2], this special issue of *Neuroepidemiology* aims to address some aspects of the consequences of ageing on neurological disorders.

From an epidemiological perspective, the increase in elderly people will be accompanied with a rise in the number of patients affected by a neurological disease, as illustrated by an analysis of the Dijon Stroke Registry that concluded there will be an anticipated 55% increase in the total annual number of stroke cases by 2030, this increase being largely driven by a rise in cases affecting elderly people (65% in people ≥ 75 years old versus 25% in those

<75 years old), with major implications in terms of future care organization and resource needs [3]. Similar to stroke, the incidence of dementia is greatly correlated with age, and the expected increase in demented patients underlines the need for better understanding mechanisms that may contribute to healthy brain aging. An original approach is provided by The Health, Aging and Body Composition study in which the authors found that the personality trait of conscientiousness may play an important role [4]. Hence, in this study that enrolled 875 older adults aged 71–82, higher conscientiousness was associated with lower dementia risk, and whether conscientiousness may be a protective factor or may be an early symptom of neurodegenerative disease remains to be elucidated to guide future screening or prevention efforts.

Stroke and dementia are 2 predominant contributors of epilepsy in the elderly as highlighted by Beghi and Giussani [2] in their well-documented review. The disease is comparatively more frequent in the older population compared with children and adults, and its increasing incidence in the elderly is related to the rise in age-related and aging-related epileptogenic conditions with specific underlying pathophysiological mechanisms that may represent therapeutic targets. Because of a peak of inci-

dence around after 75 years old, ageing of the global population will also drive the burden of amyotrophic lateral sclerosis in coming years. In their review, Giancarlo Logroscino and Marco Piccininni nicely depict the progress in our knowledge about the epidemiological features of amyotrophic lateral sclerosis based on data obtained from various registries, and the need for a geographic approach to help to better understand the causes of the disease [5].

Clinicians should be aware of some particularities of neurological diseases in the elderly, including different clinical manifestations, specific underlying causes, and tailored management of treatments. While migraine is usually regarded as a disease that affects young adults, in their narrative review, Wijeratne et al. [6] highlight

that the disease remains frequent in the elderly, sometimes with a distinct clinical phenotype, and that there are therapeutic challenges as most older patients are excluded from large trials and often have multiple comorbidities and polypharmacy. Finally, we should keep in mind that age by itself is not a disease condition, but may interact with several aspects of neurological diseases including incidence, clinical expression, or natural evolution. Louis [7] provides a brilliant illustration of this point in his convincing overview of the points of intersections between age and aging and essential tremor.

We hope that these series of articles and the multiple questions they present will encourage and promote more neuroepidemiological research on elderly people.

References

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