RESEARCH PAPER

Prevalence of cognitive impairment in Chinese: Epidemiology of Dementia in Singapore study

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ABSTRACT

Objective To study the prevalence of and associated factors for cognitive impairment and dementia in community dwelling Chinese from Singapore.

Methods This study includes Chinese subjects from the Epidemiology of Dementia in Singapore (EDIS) study, aged ≥60 years, who underwent comprehensive examinations, including cognitive screening with the locally validated Abbreviated Mental Test and Progressive Forgetfulness Questionnaire. Screen positive participants subsequently underwent extensive neuropsychological testing and cerebral MRI. Cognitive impairment no dementia (CIND) and dementia were diagnosed according to internationally accepted criteria. The prevalence of cognitive impairment and dementia were computed per 5 year age categories and gender. To examine the relationship between baseline associated factors and cognitive impairment, we used logistic regression models to compute odd ratios with 95% CI.

Results 1538 Chinese subjects, aged ≥60 years, underwent cognitive screening: 171 (11.2%) were diagnosed with any cognitive impairment, of whom 84 were CIND mild, 80 CIND moderate and seven had dementia. The overall age adjusted prevalence of CIND mild was 7.2%, CIND moderate/dementia was 7.9%. The prevalence increased with age, from 5.9% in those aged 60–64 years to 31.3% in those aged 75–79 years and 44.1% in those aged ≥80 years. Multivariate analysis revealed age, diabetes and hyperlipidaemia to be independently associated with cognitive impairment.

Conclusions In present study, the overall prevalence of cognitive impairment and dementia in Chinese was 15.2%, which is in the same range as the prevalence reported in Caucasian and other Asian populations.

INTRODUCTION

The population of Asia in 2009 was estimated at 4 billion, 59% of a global total of 6.8 billion. It is expected that the proportion of older persons aged ≥60 years among the total Asian population will rise from 10% in 2010 to 24% in 2050, and also that the absolute number of elderly will dramatically increase from 414 million to 1.2 billion. As a result of this rapid demographic aging, the burden from common age related brain diseases, such as dementia, is also expected to rise. The prevalence of dementia in Asia has previously been found to be lower than in western populations, but recent studies suggest that age specific prevalence rates may be similar.

With respect to the Chinese population, prevalence estimates of dementia from China and Singapore varied from 1.2% to 7.5% in those aged ≥50 years. Moreover, in the past few decades the focus has shifted towards the preclinical stages of dementia, such as cognitive impairment no dementia (CIND). Previous studies in Caucasian populations reported a prevalence ranging from 14.9% to 22.2%, and in Asians, including Chinese, around 7.7–22.2%. However, comparison between studies is hampered due to differences in case ascertainment, demographic factors and lack of extensive neuropsychological testing.

In view of the limited knowledge of the prevalence of cognitive impairment among Asians, we initiated a new population based study in Singapore to investigate the prevalence and associated factors of cognitive impairment in a Chinese population from Singapore.

METHODS

Study design and study population

The Epidemiology of Dementia in Singapore (EDIS) study comprised subjects from the ongoing population based community dwelling study of Chinese aged 40–85 years who participated in the Singapore Chinese Eye Study (SCES). Of the 4605 eligible persons, a total of 3353 participated (participation rate 72.8%). Ethics approval for the EDIS study was obtained from the Singapore Eye Research Institute and the National Healthcare Group Domain Specific Review Board. The study was conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained, in the preferred language of participants, by bilingual study coordinators prior to recruitment into the study.

Participants in the SCES study were randomly selected from the community and were invited to the Singapore Eye Research Institute for interview and clinical assessments, as described previously. Information on participants was collected by means of a questionnaire, physical examination and laboratory based tests. The questionnaire included data on demographics, lifestyle factors, personal and family health history, and medication use. Physical examination included anthropometry, blood pressure, pulse rate measurement and