



Featured Article

Incidence of dementia in elderly Latin Americans: Results of the Maracaibo Aging Study

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Abstract

Introduction: There are few longitudinal studies of dementia in developing countries. We used longitudinal data from the Maracaibo Aging Study to accurately determine the age- and sex-specific incidence of dementia in elderly Latin Americans.

Methods: The Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision) was used to diagnose dementia, which was classified as Alzheimer's disease, vascular dementia, or other. Age- and sex-specific incidence was estimated as the number of new cases of dementia divided by person-years (p-y) of follow-up.

Results: The incidence of all dementia diagnoses was 9.10 per 1000 p-y (95% confidence interval [CI] 7.13–11.44; 8026 total p-y), 5.18 for Alzheimer's disease (95% CI 3.72–7.03; 7916 total p-y), and 3.35 for vascular dementia (95% CI 2.19–4.91; 7757 total p-y).

Discussion: Among Maracaibo Aging Study participants younger than 65 years, the incidence of dementia was higher than that of US Whites. Among individuals older than 65 years, the incidence was comparable to the mean of previous incidence estimates for other populations worldwide.

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Keywords:

Alzheimer's disease; Epidemiology; Vascular dementia; Population-based; Hispanics

In memory of Milady Urribarri, who died September 5, 2016.

Conflict of interest: Dr Gladys E. Maestre and the University of Texas Rio Grande Valley have research-related interests in FundaConCiencia, Inc.

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1. Introduction

The prevalence of dementia, a condition that disproportionately affects the elderly, is higher in most Latin American countries than in developed countries [1–3]. In 2015, approximately 70.9 million Latin Americans were older than 60 years. By 2030, that number will exceed 121

million [4]. As such, the aging of the population puts an increasing number of individuals at risk. However, because prevalence reflects both the incidence and duration of disease, it is a limited measure of risk.

Incidence, the rate of occurrence of new cases, is a more useful measure of risk that is essential for evaluating temporal trends and for assessing the effects of preventative measures. The World Health Organization's estimates of the incidence of dementia in developed countries ranged from 3.4 per 1000 person-years (p-y) at age 60–64 years to 99.4 per 1000 p-y at age greater than 95 years [3]. There are only nine reports on the incidence of dementia in developing countries [5–12], all among those older than 65 years, and ranging from 3.2 per 1000 p-y in India [11] to 21.85 per 1000 p-y in Nigeria [7]. None of these studies included complete neuropsychological and clinical assessments of all participants.

The goal of the present study is to provide an accurate estimate of dementia incidence in Venezuela, a developing country. Longitudinal data from the Maracaibo Aging Study (MAS) [13] were used to determine the age- and sex-specific incidence of dementia and its subtypes, Alzheimer's disease (AD), and vascular dementia (VaD).

2. Methods

2.1. Sample

The MAS is a population-based study of community-dwelling individuals aged 55 years and older who resided in downtown Maracaibo, Santa Lucia County, Venezuela, between January and August 1998 [14]. The MAS investigated cognitive, cardiovascular, nutritional, and social changes associated with aging, with a special emphasis on memory-related disorders. The baseline assessment was conducted between September 1998 and December 2001. A total of 2453 of 3765 residents aged 55 years or older underwent a standardized, multidimensional assessment of laboratory tests and their neuropsychological, neuropsychiatric, cardiovascular, and nutritional status. Of the 2453 assessed at the baseline evaluation, 198 participants were diagnosed as having dementia, and one participant was not assigned a Clinical Dementia Rating (CDR) [15]. Of the remaining 2254 assessed patients who composed the at-risk population, 411 (19.74%) died or relocated before the second evaluation, 28 (1.24%) were not available for any of the three reevaluation visits, and 122 (5.12%) declined to participate in the second evaluation. The 1693 participants who were reexamined at least once between 2001 and 2009 composed the sample for our study (Fig. 1).

The MAS was approved by the Institutional Review Board of the Cardiovascular Center at the University of Zulia in Maracaibo. Informed consent was obtained from each participant, or from a surrogate when appropriate, after they were provided with a complete explanation of the study.

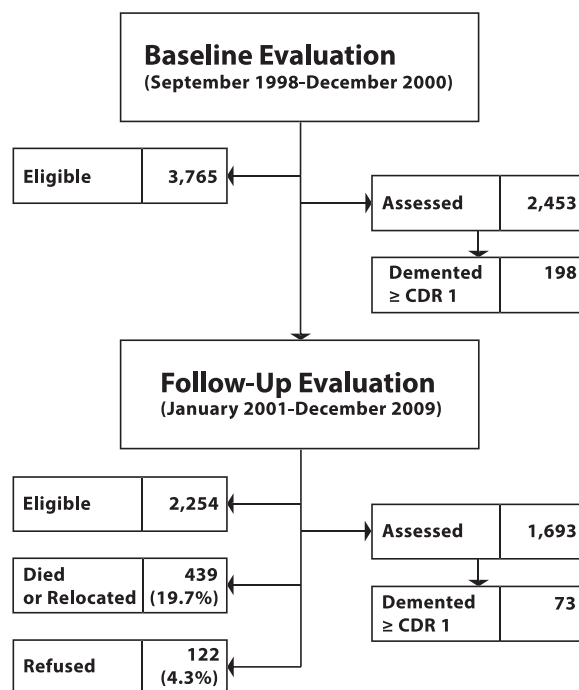


Fig. 1. Flow diagram showing numbers and percentages of Maracaibo Aging Study participants included in the baseline and follow-up assessments and incidence estimates. Abbreviation: CDR, Clinical Dementia Rating.

2.2. Dementia assessments and diagnoses

The assessment and diagnostic procedures of the MAS have been previously described in detail [13]. Briefly, a social worker visited the home of each participant and conducted a family interview. Two social workers were available during the study period, both of whom received the same training, which consisted of practice interviews, role-playing, visits to Santa Lucia with various members of the team (psychologists, physicians, historian) to understand the geography and history of the area, and biweekly feedback meetings. An informant (usually a spouse or adult child residing in the same home as the participant) was identified as knowledgeable about the participant's daily activities and health issues. Information regarding changes in the abilities of the participant was collected using an adapted version of the Dementia Questionnaire [16], the third part of the Blessed Dementia Scale [17], and the Self-Maintaining and Instrumental Activities of Daily Living Scale [18], as well as information on the family history of dementia. All the participants were invited to undergo an in-depth neuropsychiatric evaluation (performed by a trained neurologist, psychiatrist, or internist), neuropsychological testing (by a psychologist), routine laboratory tests, and apolipoprotein E (APOE) genotyping [19,20].

The neuropsychiatric assessment included a neurologic examination, original and modified versions of the Mini-Mental State Examination (MMSE) [21,22], the Blessed Orientation-Memory and Concentration Test [17], the Schwab and England Scale to assess activities

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