Prevalence of Aging-Associated Cognitive Decline in an Italian elderly population: results from cross-sectional phase of Italian PRoject on Epidemiology of Alzheimer's disease (IPREA)

Emanuele Scafato1, Claudia Gandin1, Lucia Galluzzo1, Silvia Ghirini1, Francesco Cacciatore2, Antonio Capurso3, Vincenzo Solfrizzi3, Francesco Panza3, Alberto Cocchi4, Domenico Consoli5, Giuliano Enzi6, Giovanni B. Frisoni7, Carlo Gandolfo8, Simona Giampaoli1, Domenico Inzitari9, Stefania Maggi6, Gaetano Crepaldi6, Sergio Mariotti1, Patrizia Mecocci10, Massimo Motta11, Roberto Negrini12, Demetrio Postacchini13, Franco Rengo14, Gino Farchi1 and the I.PR.E.A. Working Group (Italian PRoject on Epidemiology of Alzheimer’s disease)*

1National Center on Epidemiology, Surveillance and Health Promotion, Istituto Superiore di Sanità, Rome, 2Salvatore Maugeri Foundation, IRCCS, 3University of Bari and IRCCS Casa Sollievo della Sofferenza, San Giovanni Rotondo, Foggia, 4University of Rome “Sacro Cuore”, 5ASL 8, Vibo Valentia, 6Italian Research Council (CNR) and University of Padova, 7Centro San Giovanni di Dio-Fatebenefratelli, IRCCS, Brescia, 8University of Genova, 9University of Florence and Italian Research Council (CNR), 10University of Perugia, 11University of Catania, 12USL Bologna Nord, 13INRCA, Fermo (AP), 14University of Naples, Italy

ABSTRACT. Background and aims: The prevalence of the preclinical phase of dementia varies greatly, according to the diagnostic criteria and assessment procedures applied. The purpose of this study was to estimate the prevalence of cognitive impairment according to the Aging-Associated Cognitive Decline (AACD) diagnostic criteria in an Italian elderly population. Methods: In a multicenter community-based prospective study, 4785 Italian subjects aged 65-84 years, randomly selected from the registries of 12 Italian municipalities, were assessed by personal and informant interviews, physical and neurological examinations and an extensive neuropsychological battery. Results: Of these older subjects, 274 (9.2%) fulfilled all the AACD criteria, whereas 561 (18.8%) fulfilled only 3 of them (AACD-3). When the two groups diagnosed according to AACD criteria (AACD and AACD-3) were merged, the prevalence was 28.0% (28.3% for men, 27.6% for women). Two other groups of subjects were also identified: a) Subjects with Objective evidence of Cognitive Decline without cognitive complaints (OCD), 508 (17.0%), i.e., subjects with documented neuropsychological deficits, although neither subjects nor informants reported cognitive complaints; and b) Subjects with Cognitive Complaints without objective demonstrable cognitive deficits (CC), 44 (1.5%), i.e., subjects and/or informants reported cognitive complaints without evidence of neuropsychological deficits. Thus, taking into account the additional OCD group, a total of 1343 persons with cognitive impairment without dementia (45.0%) was identified. Conclusions: On the basis of our results, we estimate that 45% of our population-based Italian sample aged 65-84 years had some kind of cognitive deficits without dementia. (Aging Clin Exp Res 2010; 22: 440-449)

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INTRODUCTION

In Europe, addressing the phenomenon of active aging is one of the most important social and economic challenges of the 21st century. Dementia, particularly Alzheimer’s disease (AD), is common among the elderly: it is one of the major chronic conditions affecting older persons.
people worldwide, is the principal cause of disability and decreased quality of life, and is considered to be one of the largest obstacles to successful “active aging” (1-5).

Early diagnosis of dementia can help in choosing appropriate strategies for retarding or preventing further cognitive decline, allowing for earlier rehabilitation (to maintain functional autonomy as long as possible). For this reason, increased attention has been paid to diagnosing the preclinical phase of dementia and identifying populations at high risk by means of standardized criteria and neuropsychological tests (6-9).

Since the 1960s, various definitions and terms have been used to describe the preclinical phase of dementia. Consequently, in view of the lack of agreement on terminology and standardized diagnostic criteria, the results of previous studies vary greatly, even among those which used the same definition (10). In addition, many population-based studies have found that these terms do not describe a diagnostic entity but rather the unstable and heterogeneous condition of a group of subjects whose decline in one or more cognitive domains is not sufficiently severe to lead to a diagnosis of dementia, with a far wider range of outcomes than in a clinical setting. These terms may range from indicating a risk of developing dementia, due to any etiology, including AD, as well as reversion to normal in a substantial proportion (9).

Mild Cognitive Impairment (MCI), originally developed by Petersen et al. in a clinical setting (11) is one of the prevailing terms reflecting an intermediate state between normal aging and dementia. In 1994, a work group of the International Psychogeriatric Association (IPA) proposed criteria for another condition, Ageing-Associated Cognitive Decline (AACD) (12). These criteria for AACD have been used in population-based studies as an alternative construct, based on the underlying theoretical supposition that subclinical cognitive decline is a normal feature of the aging process and not an early pathologic process (12). To date, three population-based studies have examined the prevalence of AACD in Europe. The reported prevalence was 27% in Finland for persons between the ages of 68 and 78 years (13), 21% in France for persons over 60 (14), and 9-20% in Germany for persons over 75 (15).

The Italian Project on the Epidemiology of Alzheimer’s Disease (IPREA) is the first multicenter population-based prospective study on the preclinical phase of dementia, including AD, in Italy. The IPREA consists of a cross-sectional phase, to study the prevalence of, and factors associated with the preclinical phase of dementia, and a longitudinal phase, to evaluate the incidence and transition to dementia, also assessing the predictive value of biological markers and neuropsychological tests (16). The aim of this paper was to present the results of the cross-sectional phase of the IPREA, including the main characteristics of the study population, response rates, prevalence of AACD, proportion rates of dementias (including AD), and prevalence of depressive pseudo-dementia.

MATERIALS AND METHODS

Study population and sample size

The IPREA was coordinated by the Istituto Superiore di Sanità in Rome (Italian National Health Institute); the study design and methodology have been described in detail elsewhere (16). The study sample consisted of 4785 individuals aged 65-84 years, living at home or institutionalized, stratified by gender and 5-year age groups. The sample was randomly selected from the registers of 12 municipalities in 12 Italian regions (400 persons of each of the 12 participating cities and towns, 50 men and 50 women, in four age groups: 65-69, 70-74, 75-79, 80-84 yrs), including both rural and urban areas (Fig. 1). Although we had expected to select 4800 individuals, this was not possible, due to an earthquake in one of the operative units (Larino), resulting in a massive evacuation and change of residence, especially for the oldest group of individuals.

We selected Local Health Units (university clinics or national research institutes) on the basis of their previous experience in epidemiological studies on age and aging. We used the same eight Local Health Units of the Italian Longitudinal Study on Aging (ILSA) project, plus four others (17).

Fig. 1 - Centers involved in I.P.R.E.A.