Available online at www.sciencedirect.com
SCIENCE DIRECT
ELSEVIER
Archives of Gerontology and Geriatrics 41 (2005) 289–296
ARCHIVES OF GERONTOLOGY AND GERIATRICS
www.elsevier.com/locate/archger

Relationship between self-reported prevalence of diabetes mellitus using the Cornell Medical Index (CMI) and prevalence determined by glycosylated hemoglobin (HbA_{1c}) in an elderly community-dwelling population

N. Pendleton [a,*], J.E. Clague [b], M. Cobain [c], K. Thethi [c], M. Jones [a], M.A. Horan [a], L. McInnes [e], P.M.A. Rabbitt [d]

[a] *Clinical Division 1, Faculty of Medicine, University of Manchester, Stopford Building, Oxford Road, Manchester, UK*
[b] *Aintree University Hospitals NHS Trust, Aintree University Hospital, Longmoor Lane, Liverpool, UK*
[c] *Unilever Research and Development, Colworth House, Sharnbrook, Bedford, UK*
[d] *Department of Experimental Psychology, University of Oxford South Parks Road, Oxford, OX1 3UD*
[e] *Division of Psychology, University of Northumbria at Newcastle, Northumberland Building Annex, Northumberland Road, Newcastle-Upon-Tyne, UK*

Received 13 October 2004; received in revised form 4 April 2005; accepted 5 April 2005
Available online 29 June 2005

Abstract

Reports of diabetes mellitus samples in community-dwelling unselected populations suggest a prevalence of 6%. A further 3% of unknown diabetes mellitus subjects are suggested when using formal biochemical methods of diagnosis. In this study, we present the prevalence of diabetes mellitus by self-reports using the CMI and concomitant biochemical detection in 436 community-dwelling older adults who have participated in a 20-year-study of age and cognitive performance in Manchester, UK. Twenty-three of the group reported that they had diagnosed diabetes mellitus, three individuals had a raised HbA_{1c} of greater than 7.0% on random testing, but no knowledge of having diabetes mellitus. These individuals were re-contacted and three said they subsequently had a diagnosis of diabetes mellitus made within the two years following the questionnaire. We conclude that in an older population of community-dwelling subjects the numbers of undiagnosed cases of diabetes mellitus is lower than anticipated, based on large unselected population samples. The greater

* Corresponding author at: Clinical Sciences Building, Hope Hospital, Stott Lane, Salford M6 8HD, UK. Tel.: +44 161 206 4203; fax: +44 161 206 4655.
E-mail address: npendlet@fs1.ho.man.ac.uk (N. Pendleton).

0167-4943/$ – see front matter
doi:10.1016/j.archger.2005.04.009

opportunity to interact with health care professionals who may consider screening for diabetes mellitus may explain these findings.

Keywords: Diabetes mellitus in elderly; Cornell Medical Index

1. Introduction

Diabetes mellitus (DM) is a metabolic disorder with a high morbidity, in part explained by a reported failure of diagnosis in community-dwelling healthy subjects (Harris, 1998). International and United Kingdom studies report a diagnosed prevalence of DM of 6% and an undiagnosed prevalence of a further 3% in community samples (Harris et al., 1998). Prevalences vary depending on the community sample studied (Meneilly and Tessier, 2001; Goyder and Hammersley, 2003). This is thought to reflect both biological and cultural factors in the study populations.

DM in the elderly is recognized as a problem requiring special consideration, particularly in the non-independent subgroup. There is a drive to provide better services both for identification and management of DM in older adults (Meneilly and Tessier, 2001; Croxson, 2002). A common factor suggested for problems in elderly patients with hyperglycemia is a lack of their recognition. We have performed health screening on 500 older adults who are participants in a 20-year longitudinal cognitive performance research study in Manchester, UK. As part of this study, we have asked them to self-report their illness burden using the CMI (Rabbitt et al., 2004). In addition, blood sampling for glycosylated hemoglobin (HbA_{1c}) has been made. We have compared their own knowledge of a diagnosis of DM by one direct question on the CMI with a HbA_{1c} level equal to or greater than 7%, a level accepted as diagnostic of DM (Peters et al., 1996). We report the differences between the two approaches of diagnosing DM in this community sample.

2. Subjects and methods

The community sample of individuals contacted are from the Age and Cognitive Performance Research Centres (ACPRC) volunteer panel, a group of over 6000 older adults who have been described in detail previously (Rabbitt et al., 2004). This group has participated in a longitudinal study of aging for approximately 20 years, and all volunteers still active in this research in the Greater Manchester area of the UK, were invited to participate in this study in 2001. The study was partially funded by the Unilever Trust. Of the 582 volunteers contacted, 456 agreed to take part in the complete study that involved attending the ACPRC and having a variety of physical measures made and providing samples of saliva, blood and urine as part of a larger study examining multiple factors associated with aging. The participants were also asked to complete a health questionnaire called the CMI (Rabbitt et al., 2004). One question on the paper containing 195 different questions asks, 'Do you suffer with diabetes (sugar)?' We used the answer to this question alone to determine whether an individual was known to suffer with DM prior to our study.