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Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring 1 (2015) 349-357

Alzheimer's & Dementia

Diagnostic Assessment & Prognosis

Cognitive testing in older primary care patients: A cluster-randomized trial

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Abstract

Introduction: This study investigated whether neuropsychological testing in primary care (PC) offices altered physician-initiated interventions related to cognitive impairment (CI) or slowed the rate of CI progression.

Methods: This 24-month, cluster-randomized study included 11 community-based PC practices randomized to either treatment as usual (5 practices) or cognitive report (CR; 6 practices) arms. From 2005 to 2008, 533 patients aged ≥65 years and without a diagnosis of CI were recruited; 423 were retested 24 months after baseline.

Results: CR physicians were significantly more likely to order cognitive-related interventions ($P = .02$), document discussions about cognition ($P = .003$), and order blood tests to rule out reversible CI ($P = .002$). At follow-up, significantly more CR patients had a medication for cognition listed in their chart ($P = .02$). There was no difference in the rate of cognitive decline between the groups.

Discussion: Providing cognitive information to physicians resulted in higher rates of physician-initiated interventions for patients with CI.

Keywords: Age; Alzheimer's disease; Community-based; Cognitive impairment; Dementia; Mild cognitive impairment primary care; Primary care physicians

1. Introduction

Age is the single greatest risk factor for the development of dementia and disorders of cognition. As the proportion of older adults continues to grow, the coming decade will see a significant increase in the number of individuals living with impaired cognition. Trends in health care delivery suggest that, in the future, many older adults will obtain a majority of their health care from general practitioners and will not be referred to dementia specialists. However, identifying cognitive impairment (CI) in the primary care (PC) setting remains challenging [1].

Although it has been suggested that best practice care for older adults should include screening for cognitive disorders

N.R.F., B.S., E.R., K.H., and L.C. have no relevant financial interests related to the article. J.S. and L.M. have received salary support through grant RC3 AG037357 from the National Institute on Aging to Psychology Software Tools. J.S. received payment for consultant services between the years 2005 and 2011 from Forest Pharmaceuticals and between 2005 and 2009 from Pfizer Inc.

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http://dx.doi.org/10.1016/j.dadm.2015.06.009

to facilitate early detection and treatment [2], the United States Preventive Services Task Force does not recommend universal screening in PC, citing performance characteristics of screening instruments and limited evidence of effectiveness [3]. Nevertheless, beginning in January 2011, in compliance with the Patient Protection and Affordable Care Act, the Centers for Medicare and Medicaid Services began covering the costs of an annual wellness visit, which calls for detection of CI by providers conducting the annual wellness visit [4].

A number of studies have investigated screening for dementia in PC [5–7] but fewer have examined the impact of screening for mild cognitive impairment (MCI) on older adults [8–11]. With the current emphasis on earlier diagnosis of CI, the goal of this study was to determine whether identifying MCI in older PC patients, without a dementia diagnosis, would result in a change in physician practice or slow cognitive decline. Community-based PC practices were randomized to either treatment as usual (TAU) or cognitive report (CR) arms. We hypothesized that PC physicians (PCPs) in the CR group, who received CRs based on neuropsychological testing, would perform dementia screening tests, refer patients to specialists for diagnostic assessment, and prescribe anticholinesterase inhibitors more frequently than PCPs in the TAU group. We also hypothesized that patients of physicians in the CR group would have a slower rate of progression of cognitive deficits over 2 years than cognitively impaired patients in the TAU group (http://clinicaltrials.gov identifier: PCP-AG023129). We based the hypothesis on the rationale that patients with reversible CI would have improved cognition due to its spontaneous resolution or treatment of the underlying cause. If other causes of impairment were ruled out and the impairment was thought to be due to impending Alzheimer's disease (AD), the decline could be slowed if the physician prescribed cognitive-enhancing medications [12].

2. Methods

2.1. Design

This study was a 24-month, cluster-randomized trial with two parallel groups. The unit of randomization was PCP practice and not individual PCPs nor patients given that our primary outcome was physician-initiated interventions and that within practices, physicians frequently are called on to cover each other's patients and may exhibit similar practice patterns [13]. If randomization occurred at the PCP level, a given PCP could be called on to treat a patient from the other arm, leading to possible contamination between groups. Additionally, patients who share PCPs may share information about cognitive testing and subjective complaints that could lead to dilution of treatment effects [14]. Practices were recruited from October 2005 to January 2006; patients were recruited from January 2006 to January 2008. The University of Pittsburgh Institutional Review Board approved the study, and all physician and patient participants provided written informed consent.

2.2. Setting, participants, and randomization

We stratified 12 PC practices from southwestern Pennsylvania by geographic location (urban, suburban, and rural). Two of the 12 were classified as urban, and to ensure balance, they were randomly assigned to intervention or control with equal probability in a block size of two. Eight of the 12 were classified as suburban, and these sites were stratified by the number of physicians participating in the study. The eight suburban sites were also randomly assigned to intervention or control with equal probability in a block size of four. Two sites were classified as rural were randomly assigned to intervention or control with equal probability in a block size of two. Of the 12 practices, six were randomly assigned to the CR group and received the results of the patients' baseline and 24-month assessments. The remaining six practices were assigned to the TAU group and did not receive baseline CRs. After randomization, but before patient recruitment, one suburban practice (with one physician) dropped out because of perceived study burden, leaving five TAU practices in the study.

Patients were first approached by physicians who were instructed to refer all patients aged $\geq$65 years without a dementia diagnosis to the study coordinator. Patients with a diagnosis of dementia on their medical record, or with mini-mental state examination (MMSE) [15] scores of 18 or below, which indicates the presence of unrecognized dementia, were excluded from this study. However, patients with complaints of memory loss who did not have a diagnosis of dementia were not excluded. A total of 731 patients were referred. Among those, 183 (25%) declined participation or were ineligible (e.g., $<$65 years old, had a notation of "dementia or Alzheimer's disease" somewhere within the medical record, died before enrollment; Fig. 1). Comparisons between patients who did and did not participate demonstrated no significant differences regarding PC office, physician, geographic location, or group assignment. A total of 548 patients completed the baseline assessment; 15 (2.7%) were subsequently excluded because they did not meet study entry criteria (e.g., MMSE $<$18, dementia diagnosis, or the referring physician was not a participating PCP). The final sample included 533 patients (TAU = 204, 38.3%; CR = 329, 61.7%).

Of the initial 533 enrolled participants, 423 (79.4%) returned for the 2-year assessment (TAU = 169, 82.8%; CR = 254, 77.2%). Among the 110 (20.6%) not included in the 2-year assessment (TAU = 35, 17.2%; CR = 75, 22.8%), 18 (16.4%) died (TAU = 12, CR = 6), 15 (13.6%) changed PCP (TAU = 5, CR = 10), 30 (27.3%) cited poor health (TAU = 10, CR = 20), 27 (24.5%) cited lack of interest (TAU = 5, CR = 22), and 20 (18.1%) gave no reason (TAU = 3, CR = 17).