Published in final edited form as:

Ann Pharmacother. 2010 September ; 44(9): 1376–1383. doi:10.1345/aph.1M724.

Trends in diabetes medications use and prevalence of geriatric syndromes in older Mexican Americans from 1993/1994 to 2004/2005

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Abstract

Background—New diabetes medications introduced over the last decade have led to changes in diabetes treatment recommendations for the increasing number of elderly patients with diabetes. It is however not clear whether these changes are accompanied by changes in prevalence of co-morbid geriatric syndromes.

Objectives—To determine if changes in diabetes treatment between 1993/94 and 2004/05 were accompanied by changes in prevalence of geriatric syndromes in Mexican Americans aged 75 and older.

Methods—Data from Hispanic Established Population for the Epidemiologic Study of the Elderly was used. Participants aged 75 years and older with diabetes in 1993/94 (n=284) and in 2004/05 (n=324, new cohort added in 2004/05) were included in the analyses. Medication use and geriatric syndromes prevalence rates were estimated and compared using descriptive and

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Sponsor's Role: The sponsor had no role in the design, methods, subject recruitment, data collections, analysis or preparation of the manuscript.

Conflict of Interest: There is no conflict of interest per author guidelines.

univariate statistics for continuous variables and contingency tables (chi-square) for categorical variables.

Results—Older Mexican American with diabetes in 2004/05 were more likely to be taking two or more oral diabetes medications than was the case in the 1993/94 cohort; most were the newly introduced oral diabetes medications. Insulin use as sole diabetes therapy decreased from 20.3% in the 1993/94 cohort to 7.5% in the 2004/05 cohort. The 2004/05 cohorts reported longer diabetes duration, and higher prevalence of obesity and hypertension; they were also more likely than the 1993–94 cohorts to have more geriatric syndromes: pain, arthritis, incontinence and self-reported activities of daily living (ADL) disability. No significant differences exist between the two cohorts in objective measures of cognitive and physical function.

Conclusions—Older Mexican Americans with diabetes in 2004/05 use more of the newer diabetes medications and less of insulin compared to the 1993/94 cohorts. The prevalence rates of geriatric syndromes were higher in the 2004/05 cohort. Our findings suggest that screening for and treating co-morbid geriatric syndromes is increasingly important for optimal geriatric diabetes care.

Keywords

Diabetes medications; diabetes mellitus; geriatric syndromes; Mexican Americans; trends

Introduction

Diabetes is the seventh leading cause of death in the United States (US) and its prevalence is expected to increase dramatically among older adults in the coming years.¹ In particular, Mexican Americans, a fast-growing segment of the US population, are disproportionately affected by type 2 diabetes (T2DM). Recent research estimates the prevalence of diabetes among Mexican Americans aged 75 and older to be around 37% in 2004/05, a rate higher than the prevalence of 15.4% among non-Hispanic white adults of equivalent age.^{1;2} Also, Mexican Americans with diabetes have high rates of diabetes-related complications in part due to multiple comorbidities (e.g., hypertension) and suboptimal adherence to diabetes medication.^{3–5}

National trends show that the treatment prescribed to patients with T2DM has changed over the past decade with the advent of new medications and the introduction of new practice recommendations for older populations.^{6;7} Data from the National Disease and Therapeutic Index (NDTI) show a declining use of insulin from 38% to 25% between 1994 and 2007. Concomitantly, new oral antidiabetic therapies have been introduced into the US market.⁶ The American Diabetes Association (ADA) also recommends that physicians optimize the treatment of conditions commonly associated with diabetes (e.g., hypertension and hyperlipidemia). These treatment recommendations, along with more medication options, may help reduce diabetes-related complications, potentially leading to increased quality of life. However, use of medications in older patients with diabetes to achieve target goals of glycemia, lipids and blood pressure may not always lead to reduced cardiovascular events (e.g. stroke and myocardial infarction) or increased quality of life unless, adequate attention is paid to optimal management of specific geriatric syndromes.^{8;9;10}

Geriatric syndromes are a group of conditions (E.g. urinary incontinence, depression, cognitive impairment, pain and functional disability) with a common multi-factorial etiology often seen in frail older adults.¹⁰ These conditions are highly prevalent in persons with diabetes.^{11;12} A seven-year prospective cohort study of initially non-disabled Mexican Americans aged 65 and older (n=1835) showed that participants with diabetes were more likely to report any limitation in lower body ADL function (hazard ratio [HR] = 2.05, 95%

confidence interval [CI], 1.58–2.67), mobility tasks (HR = 1.69, 95% CI, 1.39–2.04), and 8-foot walk (HR = 1.46, 95% CI, 1.15–1.85) compared to those with no history of diabetes.¹³ These findings remained significant even after controlling for age, sex, medical conditions, vision function, cognition, and obesity at baseline. Other researchers have also shown that elderly persons with diabetes have a higher rate of depressive symptoms, disability, incontinence, vision impairment, and health service use than those without diabetes.¹³ However, little is known about changes in diabetes treatments over time and whether such changes are accompanied by changes in prevalence of geriatric syndrome over time in elderly Mexican Americans aged 75 years and older.

To address this gap in knowledge, this study examined the trends in use of diabetes medications and the prevalence of geriatric syndromes from 1993/94 to 2004/05 in Mexican Americans aged 75 and older, using data from two samples of subjects participating in the Hispanic Established Population for the Epidemiologic Study of the Elderly (Hispanic EPESE). This study builds on previous research describing older Mexican Americans with diabetes.^{5;13–16} With the advent of newer anti-diabetes medications over the last decade and increasing public education about ensuring good diabetes control, we hypothesized that the prevalence of geriatric syndromes would be lower in the 2004/05 cohorts than the 1993/94 cohorts of Mexican American elders with diabetes. Our hypothesis derived from the well-known diabetes-associated complications of stroke, neuropathy (painful sensory, autonomic, and motor subtype), peripheral artery disease (pain from ischemic limbs and amputations); these complications may indirectly influence the onset and progression of geriatric syndrome conditions (e.g. motor disability, impaired cognition, pain, and urinary incontinence).

Methods

Sample

The sample for this study was obtained from the longitudinal Hispanic EPESE, a longitudinal community-based study of older Mexican Americans residing in the southwestern US (Texas, California, Arizona, Colorado and New Mexico). The baseline sample interviewed in 1993/94 included 3,050 Mexican Americans aged 65 and older selected through a multistage area probability sampling procedure. This sample selection methodology ensured that results would be generalizable to approximately 500,000 older Mexican Americans. Details of the sampling strategy are described elsewhere.¹⁷ In 1993/94, 1,332 subjects were aged 75 and older. In 2004/05 a new sample of Mexican Americans aged 75 and older (n=902) was added to the study using a similar sampling strategy. In this study, the sample included those subjects aged 75 years and older with diabetes in 1993/94 (n=284) and in the new cohort added in 2004/05 (n=324). In the 1993/94 cohort there was medication information on 196 subjects and, in 2004/05, 284 subjects. Those without medication data were significantly more likely to be older and have instrumental activities of daily living (IADL) disabilities. The University of Texas Medical Branch (UTMB) Institutional Review Board on human protection and research ethics approved the study.

Measures

Subjects were coded as having diabetes if in 1993/94 and 2004/05 they reported that they had been told by a doctor that they had diabetes, sugar in their urine, high blood sugar or if they were found to be on any anti-diabetic drugs upon inspection of the medications they had taken in the two weeks prior to the interview.

Medications

Diabetes treatment was determined by categorizing each subject's medications. Medications were ascertained by asking each respondent to show the interviewer all medications taken in the two weeks prior to the interview. Subjects were considered on diabetes treatment if oral anti-diabetes medications and/or insulin were found during the medications inspection process. Anti-diabetes medications were classified into four groups: oral anti-diabetes medication only, insulin only, taking both oral anti-diabetes medication and insulin, and receiving no treatment. The anti-diabetic medications were also classified by drug class. Drug classes included sulfonylurea only, biguanides, taking multiple combinations of medications, and others. The combination medication category included any respondent who indicated they were taking either a single pill containing two medications or if they took multiple medications in more than one pill. The other category included patients who took either meglitinide derivative or a thiazolidinedione (TZD). These medications were combined into one category due to the small number of respondents taking them. Lastly, those patients not on any treatment for their diabetes were classified as receiving no treatment.

Blood Pressure Measurements and Use of Angiotensin Inhibitors

Blood pressure was measured by average standing blood pressure reading. Blood pressure was dichotomized as $<130/80$ and $\geq 130/80$. Additionally, the participants were also assessed for the use of Angiotensin Inhibitors (E.g., Angiotensin-converting enzyme (ACE) inhibitors and Angiotensin Receptor Antagonists (ARB)). Subjects were considered on Angiotensin Inhibitors if Angiotensin Inhibitors medications were found during the medications inspection process two weeks prior to the interview. We included assessment of blood pressure goal $<130/80$ and use of angiotensin inhibitors because they are practice recommendations by the ADA.⁷ Optimal BP control and angiotensin inhibitor use have been shown to reduce the risk of diabetes-related kidney damage.⁷

Geriatric Syndromes

Geriatric syndromes assessed in this study were cognitive function, presence of pain, arthritis, incontinence, and physical function. Cognitive function was dichotomized as less than 21 (impaired or poor cognition) and 21 or greater (normal or good cognition) using the Mini-Mental Status Examination (MMSE).^{18–20} The presence of pain was measured with the question, “In the past month, did you notice any pain or discomfort when you stood or walked?” Yes to the question was coded as “1” for having pain and “0” for no pain, during data analysis. Subjects were coded as having arthritis if they indicated that a doctor or health care professional told them they had arthritis. The response to the question was coded as yes versus no. Incontinence was measured by a self-report question asking each subject, “How often do you have difficulty holding your urine until you can get to a toilet – never, hardly ever, some of the time, most of the time, or all of the time?” Incontinence was dichotomized into 2 groups: those who had difficulty some or most of the time versus the others. Physical function was measured by two self-report questions on activities of daily living (ADL) and instrumental activities of daily living (IADL). ADL disability was determined if a subject indicated needing help with one or more of the following: bathing, grooming, dressing, eating, transferring or toileting. IADL disability was determined by needing assistance with one or more of the following: using telephone, driving, shopping, preparing meals, doing light housework, taking medicine or handling money. Additionally, a measured assessment of physical function was included using the Performance Oriented Mobility Assessment (POMA). The POMA consists of standard measured assessments of standing, balance and walking speed.²¹ The POMA total was categorized as 1–4, 5–8, and 9–12. Additionally, balance, chair stands and walking a normal pace were analyzed separately.

Covariates

Other covariates included in the analyses included age, gender, marital status, education, body mass index (BMI), self-reported hypertension, duration of diabetes and health insurance coverage. Age was measured on a continuous scale. Gender was coded 1 for female and 0 for male. BMI was calculated from measured height [meters squared (m^2)] and weight [kilograms (kg)] and categorized into <25 , 25–29 and ≥ 30 kg/m^2 . Hypertension was a determined through self-report question asking each subject, “Has a doctor ever told you that you have high blood pressure?” Health insurance was categorized into four groups: no insurance; Medicare only; Medicare and Medicaid; or private insurance and Medicare.

Statistical Analysis

The descriptive characteristics of the sample were calculated as means and 95% confidence intervals for continuous variables and proportions for categorical variables. All comparisons were made using Rao-Scott Chi-square for categorical variables and t-test statistics for continuous variables. The prevalence of diabetes treatment and geriatric conditions were estimated in both cohorts using the Rao-Scott chi-square test. SAS Version 9.2 survey procedures software (SAS Inc., Cary, NC) was used to perform all analyses.

Results

Table 1 shows the descriptive characteristics of Mexican Americans aged 75 and older with diabetes in 1993/94 and 2004/05. The duration of diabetes significantly increased from 13.1 years in 1993/94 to 17.0 years in 2004/05 ($p=.001$). BMI also increased between 1993/94 and 2004/05. The percentage of overweight (BMI 25–29) persons with diabetes increased from 35.2% in 1993/94 to 42.7% in 2004/05 and obese (BMI ≥ 30) increased from 28.1% to 36.7% ($p=.003$). The prevalence of self-reported hypertension also increased from 48.1% in 1993/94 to 70.7% in 2004/05 ($p<.001$).

Table 2 presents the prevalence of anti-diabetes medication use in 1993/94 and 2004/05. As expected, Mexican Americans aged 75 and older in 2004/05 used more medications, especially newer medications not available in 1993/94. As expected, with new oral medications, less insulin use was observed. Overall the treatment rate for diabetes, either with oral hypoglycemic or insulin, did not change between 1993/94 and 2004/05. However, the use of insulin only as anti-diabetes treatment significantly decreased from 20.3% in 1993/94 to 7.5% in 2004/05. Also, as expected, the number of medications taken by older Mexican Americans with diabetes increased significantly over time ($p=.001$).

Table 3 shows the prevalence of geriatric syndromes among Mexican Americans aged 75 and older with diabetes. In 2004/05 Mexican Americans aged 75 and older were more likely to have more geriatric syndromes including pain, arthritis and incontinence than those in the 1993/94 cohort. Additionally, self-report ADL disability increased between the two time periods.

The prevalence of pain doubled between the two time periods from 37.1% in 1993/94 to 61.1 in 2004/05 ($p<.001$). Persons with diabetes also reported higher prevalence of arthritis in 2004/05. The prevalence increased from 49.9% in 1993/94 to 63.8% in 2004/05. The prevalence of incontinence also increased from 17.6% in 1993/94 to 39.7% in 2004/05 ($p<.001$). The only measure of function that significantly changed between 1993/94 and 2004/05 was self-reported ADL disability, which increased from 29.6% in 1993/94 to 41.5% in 2004/05 ($p=.047$). There was no significant change in cognitive function, IADL disability or measured physical function between 1993/94 and 2004/05. There were significant cohort differences in reported pain and incontinence, but not in other measures of geriatric syndromes (data not shown).

Discussion

We examined trends in anti-diabetes medications between 1993/94 and 2004/05 and whether these trends would be accompanied by changes in the prevalence of geriatric syndromes over the same period in older Mexican Americans with diabetes. Mexican Americans aged 75 and older with diabetes in 2004/05 were more likely to be taking two or more oral anti-diabetes medications than was the case in the 1993/94 cohort. The use of insulin as sole diabetes therapy was lower (7.5%) among the 2004/05 cohorts compared with the 1993/94 cohorts (20.3%). Sulfonyleurea and insulin use decreased and Metformin use increased in the new cohorts. The 2004/05 cohorts reported longer diabetes duration, and higher prevalence of obesity and hypertension. The 2004/05 cohorts were also more likely than the 1993–94 cohorts to have geriatric syndromes conditions: pain, arthritis, incontinence and self-reported ADL disability. No significant differences exist between the two cohorts in objective measures of cognitive and physical function.

The observation that conditions that make up the geriatric syndromes have increased in prevalence over 10 years is a surprising finding; we thought the exposure of the 2004/05 cohorts to newer (and presumably more effective) diabetes medications would translate to better health outcomes as defined by lower rates of geriatric syndromes. Our findings of high rates of geriatric syndromes in seniors with diabetes are consistent with past research suggesting that current clinical guidelines may not always be adequate for frail older adults with diabetes.^{11;12} Our findings of increased geriatric syndromes in 2004/05 cohorts despite exposure to newer medications suggest that screening for and managing co-morbid geriatric syndromes, in addition to following ADA-recommended guidelines, is important to overall health of elderly patients living with diabetes. Future study is needed to examine potential association between level of glycemic control (i.e. A1C value) and increased prevalence of geriatric syndromes in the 2004/2005 cohorts. Unfortunately, our database did not have these blood measures to compare.

This study provides insight into the management of diabetes among very old Mexican Americans, filling a gap in knowledge about trends in anti-diabetes medication use and the prevalence of geriatric syndromes in this population. Our findings suggest that quality of care indicators for diabetes in the very old people should include prevention and management of co-morbid geriatric syndromes, in addition to the ADA-recommended guidelines of optimal glycemic, BP and lipid control.^{11;12} The standard ADA treatment guidelines suggest that persons with diabetes meet strict glycemic, lipid, and blood pressure control to prevent diabetes-related complications. In the face of the recently published data from the New England Journal of Medicine^{8;9}, these guidelines may not necessarily decrease cardiovascular events and other complications, especially in frail elders with multiple co-morbidities and limited life expectancy. Findings from our study and others^{8;9;10;11;12} thus underscore the importance of incorporating management of geriatric syndromes as part of routine care for elderly patients living with diabetes.

Delaying or preventing the onset of the conditions that make up the syndromes has been shown to improve seniors' quality of life, preserve their ability to live independently, and delay nursing home placement.^{10;11;12} Considerations of presence of geriatric syndromes, quality of life, and life expectancy are increasingly important in evaluating quality of care for older patients,^{12;22} in addition to ADA recommended indicators of diabetes control. Strict adherence to ADA guidelines may paradoxically result in unwanted outcomes in older patients with diabetes. For example, in a 3.5 year randomized study (the Action to Control Cardiovascular Risk in Diabetes Study Group (ACCORD Trial)) of 10,251 patients (mean age, 62.2 years) with diabetes, those with tightly-controlled diabetes (median glycated hemoglobin levels of 6.4%) were 22% (hazard ratio, 1.22; 95% CI, 1.01 to 1.46; P=0.04)

more likely to die compared to those with less tight control (glycated hemoglobin levels range 7.0–7.9%).²³ Patients in the tight control group also experienced more hypoglycemic episodes and weight gain of over 10kg.²³ Again, because of lack of blood data in our study, we cannot investigate association between glycemic control and presence of geriatric syndromes.

It is not clear how diabetes might be associated with increased risk of geriatric syndromes. The increase in BMI and longer duration of diabetes among the 2004/05 cohorts are potential explanations for the increased rate of geriatric syndromes we observed over time. Diabetes is known to alter neuromuscular functions as a result of neuropathic and vasculopathic changes.^{10;11;12;13;24} Such alterations in function might over time lead to decreased mobility and ADL ability, poor bladder control, and high risk of neuropathic pain.^{10;11;12;13;24} The 2004/05 cohorts in our study had a higher BMI than the 1993/94 cohort. The increase in obesity and overweight in the new cohorts might also have contributed to the higher rates of incontinence, pain, and arthritis, a finding consistent with past research.²⁴ In a cross-sectional study of 925 community-dwelling elderly women aged 70 years and older, obesity was independently associated with greater likelihood of reporting pain (OR=1.46, 95% CI=1.07–2.01) and urinary incontinence (OR=1.44, 95% CI=1.08–1.92).²⁴ This increase in overweight/obesity in the 2004/05 cohorts suggests that clinicians should increase their efforts in the management of obesity in elderly patients with diabetes; these efforts may have potential to decrease the occurrence of geriatric syndromes in this population.

Another area needing more efforts from clinicians is optimal blood pressure management. The results of our study showed that, despite over 70% of subjects reporting having hypertension in 2004/05, only 30% reached the goal blood pressure recommended by the ADA. This finding suggests a need to develop and test more effective and culturally appropriate ways to improve hypertension management in older Mexican Americans with diabetes. This population will be prime candidates for use of angiotensin inhibitors as first line anti-hypertensive agent. The finding of poor BP control in this population may in part explain some of the previously reported increased risk of kidney problems in older Mexican Americans with diabetes.⁵

The limitations of our study include the use of self-report for diagnosis of diabetes and not via use of fasting plasma glucose. However, self-reported diabetes has been found to be a highly reliable measure.^{25–28} Because of absence of blood data in our study, we could not test the association between tight glycemic control as measured by A1C and increased risk of geriatric syndromes. Examining this association is an important area for future research. Again, the lack of blood measure in our study precludes testing whether the increased prevalence of geriatric syndromes in the new cohorts is related to high A1C level and diabetes duration. Finally, the prevalence of geriatric syndromes reported in this study may have been influenced by the level of awareness of the conditions. Awareness of disease was not a factor included in the survey.

In conclusion, older Mexican Americans with diabetes in 2004/05 used more of metformin and less of sulfonylurea compared to the 1993/94 cohorts. Insulin use as sole diabetes therapy was also lower in the 2004/05 cohorts. The 2004/05 cohorts had higher prevalence of obesity and hypertension; they were also more likely than the 1993–94 cohorts to have more geriatric syndromes: pain, arthritis, incontinence and self-reported ADL disability. Because of the higher BMI in the new cohorts, it is possible that clinicians may be adjusting their practice by prescribing more of metformin and less of the sulfonylureas for the overweight new cohorts; metformin is associated with weight loss while sulfonylureas tend to promote weight gain. For very old Mexican Americans with diabetes, our findings of

increasing prevalence of co-morbid geriatric syndromes suggest that preventing and managing these co-morbidities is increasingly important for optimal geriatric diabetes care. Any intervention to manage these co-morbidities (e.g. drugs for impaired cognition) will require a consideration of the elderly patient's remaining life expectancy, patient's preferences, evidence-based data for cost-effectiveness, and potential harms from poly-therapy. Additional studies are needed to investigate potential explanatory mechanisms (e.g. increasing BMI) for the increasing prevalence of incontinence, ADL disability, and other geriatric syndromes in older patients with diabetes. Such studies might inform development and implementation of interventions to reduce the burdens of diabetes-related morbidity in the elderly

Acknowledgments

Funding: This study was supported in part by Grant P50 CA105631 (University of Texas Medical Branch Center for Population Health and Health Disparities) funded by the National Institutes of Health, National Cancer Institute, and Grant AG10939 (Hispanic Established Populations for Epidemiologic Studies of the Elderly) funded by the National Institute on Aging. Dr. Raji was supported in part by Public Health Service Grant P30-AG-024832-01 and by the Research Supplement to Promote Diversity in Health-Related Research Grant 1R01AG031178-01A1S1 from the National Institute on Aging, USA. Dr. Beard was supported by funding from The National Institutes of Health and the National Institute of Aging (5T32 AG000270-10; PI J. S. Goodwin).

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Table 1

Descriptive characteristics persons with diabetes by time period (un-weighted frequencies and weighted percents, n=566) ^(a).

	1993/1994 (n=242)		2004/2005 (n=324)		p-value
	n ^(a)	% or Mean, CI	n ^(a)	% or Mean, CI	
Age (Mean, 95% CI)	242	80.4 (79.9–81.0)	324	80.5 (80.0–80.9)	0.499
Education, highest grade level achieved (Mean, 95% CI)	239	4.1 (3.6–4.6)	324	4.9 (4.5–5.4)	0.066
Female	142	58.6	202	62.6	0.460
Married	102	41.1	149	44.4	0.536
MD visits (Mean, 95% CI)	234	8.4 (7.5–9.3)	321	9.1 (7.8–10.5)	0.420
Diabetes duration (Mean, 95% CI)	218	13.1 (11.6–14.4)	311	17.0 (14.4–19.6)	0.001
Type of insurance					0.512
No insurance	11	6.1	13	4.3	
Medicare only	87	33.1	85	27.5	
Medicare & Medicaid or Medicaid only	101	44	158	44.7	
Private & Medicare	43	16.9	68	23.5	
Body mass index					0.003
<25	65	36.7	61	20.6	
25–29	74	35.2	111	42.7	
≥30	63	28.1	83	36.7	
Self-report hypertension	113	48.1	229	70.7	<.001
Blood pressure (< 130/80)	74	30.9	113	34.8	

CI, confidence interval

^aNote: The number for each category may be less than the sample due to missing data.

Table 2

Prevalence of diabetes treatment and Angiotensin Inhibitor (AI) use in Mexican Americans aged 75 and older with diabetes between 1993/94 and 2004/05. (unweighted frequencies and weighted percents, n=480).

	1993/1994 (n=196)		2004/2005 (n=284)		p-value
	n	%	n	%	
Number of oral hypoglycemic drugs					0.001
0	89	47.7	101	36.4	
1	105	51.1	144	49.7	
≥2	2	1.01	39	13.9	
Oral hypoglycemic only	104	50.1	172	60.6	0.079
Insulin only	32	20.3	26	7.5	0.001
Oral hypoglycemic and insulin	3	1.36	11	2.95	0.309
Any treatment (oral hypoglycemic or insulin)	139	72.6	209	71.1	0.090
No treatment	57	27.4	75	28.8	0.764
Medications					
Angiotensin-inhibitor (^a)	45	23.1	82	29.6	0.204
Sulfonylurea only	104	50.8	63	19.1	<.001
Combination drug (^b)	3	1.50	45	16.0	<.001
Metformin only	--	--	58	24.1	--
Other (^c)	--	--	16	4.21	--

^a AI, Angiotensin Inhibitors (e.g. Angiotensin-converting enzyme (ACE) inhibitors and Angiotensin Receptor Antagonists).

^b Combination drug included (1) pill combination drugs and the use of two or more pills which include the combinations of sulfonylurea and metformin, metformin and TZD (thiazolidinediones), sulfonylurea and TZD, combination drug and metformin, sulfonylurea, metformin and TZD.

^c Other included meglitinide derivative and TZD.

Table 3
Prevalence of geriatric conditions among Mexican Americans aged 75 and older with diabetes.

	1993/1994 (n=242)		2004/2005 (n=324)		p-value
	n	% or Mean, CI	n	% or Mean, CI	
Cognitive function (MMSE) (<21)	100/242	47.4	179/324	53.8	0.598
Pain	67/190	37.1	184/316	61.1	<.001
Arthritis	111/242	49.9	199/320	63.8	0.006
Incontinence	25/157	17.6	120/313	39.7	<.001
Any ADL disability	75/241	29.5	141/324	41.5	0.047
Any IADL disability*	180/242	75.9	256/324	79.0	0.580
Total POMA (Mean, 95% CI)	227	4.13 (3.56–4.07)	307	4.73 (3.86–5.59)	0.248
POMA categories					0.615
Unable to do	66/196	31.9	92/314	30.0	
1–4	36/196	15.8	71/314	22.2	
5–8	60/196	32.2	85/314	27.7	
9–12	34/196	20.2	66/314	20.1	
Balance - standing	130/232	58.2	160/307	51.9	0.397
Chair stands	120/219	57.2	157/280	58.2	0.886
Walk normal pace	156/229	69.6	209/306	67.5	0.716

MMSE, Mini-Mental Status Examination; ADL, Activities of Daily Living; IADL, Instrumental Activities of Daily Living; POMA, Performance Oriented Mobility Assessment; CI, confidence interval.

* Note: IADL excludes mobility items