Predictors of Persistence of Use of the Novel Antidiabetic Agent Acarbose

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Background: Acarbose is the first of a new class of antidiabetic agents, the α-glucosidase inhibitors. This study characterizes and identifies predictors of persistence of use of acarbose.

Methods: Medical, pharmaceutical, and demographic records were extracted for 2 cohorts of patients (social assistance recipients and seniors) from the databases of Quebec’s provincial health plan. Patients were eligible for inclusion if they had received their first dispensation of acarbose between August 1, 1996, and December 31, 1997. The observation period included at least 1 year before the first dispensation and a minimum of 4 months after.

Results: New users of acarbose included 216 social assistance recipients and 677 seniors who were followed up for 82,914 and 270,041 person-days, respectively. Median persistence with acarbose treatment was 83 days (95% confidence interval, 75-105 days) for social assistance recipients and 105 days (95% confidence interval, 90-119 days) for seniors. In both cohorts, treatment by an endocrinologist vs another physician predicted longer treatment persistence. In the seniors cohort, additional determinants of (earlier) treatment discontinuation included a higher initial daily dose, previous treatment with insulin, and consultation with a gastroenterologist after treatment initiation.

Conclusions: New users of acarbose showed low persistence in 2 cohorts of beneficiaries of Quebec’s provincial health plan. Prescribing specialist was an important predictor of persistence in seniors and the socially assisted. The importance of 4 additional factors in seniors only led to hypotheses concerning population differences in treatment expectations and in the occurrence and tolerance of adverse effects.

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PATIENTS AND METHODS

SOURCE OF DATA

The Régie de l’Assurance Maladie du Québec (RAMQ) is the provincial health insurance plan for the province of Québec. The RAMQ provides drug and medical services coverage for persons receiving social assistance (“welfare”) and for all persons older than 65 years. All claims data are captured by the RAMQ administrative database and coded to preserve patient and physician anonymity before their release for research purposes. The accuracy and comprehensiveness of the RAMQ pharmaceutical data have been validated by Tamblyn et al.13

COHORT DEFINITION

From the RAMQ database, we retrieved demographic information and all medical services and pharmaceutical records pertaining to the study period July 1, 1995, through April 30, 1998, for all beneficiaries (including social assistance recipients [SARs] and seniors) who had received at least 1 acarbose dispensation between July 1, 1996 (the date on which acarbose was included by the RAMQ as a reimbursable medication), and April 30, 1998. Patients remained eligible for inclusion in the study if they had received their first (index) acarbose dispensation during the baseline period (August 1, 1996, to December 31, 1997) and remained alive for at least 4 months after the index acarbose dispensation (all patients met this criterion). Two mutually exclusive cohorts of new users of acarbose were then defined by age restriction: (1) the SAR cohort included beneficiaries of the revenue security program aged 21 to 64 years at their index (acarbose) dispensation and (2) the seniors cohort included patients 66 years or older at their index dispensation.

The observation period for each cohort member included an antecedent period, which extended from July 1, 1995, to the individual’s index acarbose dispensation date; an index period, which corresponded to the duration of the individual’s index dispensation; and a follow-up period, which extended from the start of the individual’s index dispensation to April 30, 1998.

OUTCOME DEFINITIONS

Two outcome variables were analyzed: (1) the frequency of renewal of the first (index) acarbose dispensation (a dichotomous variable) and (2) the persistence with acarbose treatment in days from the date of the index dispensation (a continuous variable). We determined the frequency of renewal of the first acarbose dispensation in 2 ways: (1) the proportion of those in each cohort who ever renewed their initial (index) dispensation for acarbose by the end of follow-up (April 30, 1998) regardless of any gap between the end of the first dispensation and the beginning of the renewal and (2) the proportion in each cohort who renewed their initial acarbose dispensation during the study and within the permissible period (gap) between the prescribed end of the first dispensation and the date of the next dispensation. The permissible gap after the first dispensation was defined as half the duration of the index dispensation or 7 days, whichever was longer.

Persistence with (duration of) acarbose treatment was defined as the number of days from the date of the start of the index dispensation (index date) to the time of first failure to continue renewals of acarbose with the permissible gap between dispensions. As previously, the permissible gap between the end date of a given acarbose dispensation and the date of renewal was defined as half the duration of the given acarbose dispensation or 7 days, whichever was greater. This definition of persistence corresponds to the duration of treatment during which compliance (proportion of pills dispensed that would have been prescribed end of the first dispensation and the date of the next dispensation. The permissible gap after the first dispensation was defined as half the duration of the index dispensation or 7 days, whichever was longer.

RESULTS

FREQUENCY OF FIRST USE

Analyses of the RAMQ databases indicated that 216 Quebecois SARs aged 21 to 64 years received a first dispensation of acarbose during the baseline period. According to statistics provided by the Régie Régionale de la Santé et des Services Sociaux du Montréal-Centre, Montreal (Costas Kapetanakis, MSc, written communications, January 27, 1999), the total number of Quebec residents aged 20 to 65 years who were SARs as of December 31, 1997 (the end of the baseline period), was 491,559. According to the most recent (1991) Quebec survey data (Costas Kapetanakis, MSc, written communications, January 27, 1999), approximately 2.5% of the Quebec general population aged 20 to 64 years are diabetic (including types 1 and 2). During the defined baseline period, first users of acarbose thus constituted approximately 1.8% of prevalent diabetic SARs in Quebec.

A total of 677 Quebec residents 66 years or older received an initial dispensation of acarbose during the baseline period. At the census date closest to this period (July 1997), the Quebec population 65 years and older numbered 884,875. Quebec survey data (Costas Kapetanakis, MSc, written communications, January 27, 1999) indicate a prevalence of diabetes among those 65 years and older of 10.3%. Acarbose was thus first prescribed to approximately 0.7% of prevalent diabetics older than 65 years in Quebec during the defined baseline period.

The 2 cohorts of new users of acarbose (216 SARs and 677 seniors) were followed up for 82,593 (SARs) and 268,318 (seniors) person-days after their index dispensation. Median follow-up was 392 days (range, 128-637 days) for SARs and 412 days (range, 128-637 days) for seniors.
been consumed if taken as directed until the renewal date) remained greater than 66%; patients were considered to have effectively discontinued treatment at the point at which compliance dropped to less than 66%. The total duration of treatment included the permissible gap after the final dispensation completed during the study; for patients still being treated at the end of the study, the duration of treatment was censored at that date.

STATISTICAL ANALYSIS

Predictors of persistence with acarbose treatment that were suspected a priori from among the indicators available within the administrative databases of RAMQ included age at index date, sex, region of habitation, type of medical specialist who prescribed the index acarbose dispensation, consultation with a gastroenterologist before or after the index dispensation (as an indicator of gastrointestinal susceptibility or adverse effects, respectively), other diabetic agents dispensed to the patient in the year before the first acarbose dispensation, initial mean daily dose of acarbose (in milligrams per day), and other medications whose duration of dispensation included the index date. A chronic disease score (CDS) (a global index of illness) at the index dispensation was computed according to a method that weighs concomitant medications according to their usual indications.

The CDS was calculated by assigning scores (0-5) to classes of drugs according to the severity of the disease for which they were prescribed; the CDS was equal to the sum of scores for drugs dispensed to patients during the index acarbose dispensation.

For each of the two alternative definitions of renewal of the first dispensation and for each of the suspected predictors, crude stratified analyses were conducted by computing the frequency of renewal within strata defined by categories of the predictor. The occurrence and direction of a change in the mean daily dose (≥25 mg) of acarbose after the index dispensation were also investigated in those who ever had a renewal. Ever-renewers were also subcategorized as either compliant or noncompliant renewers according to whether the first renewal occurred within the permissible gap.

Survival functions describing persistence of acarbose treatment were computed using the SAS life test procedure (SAS Institute Inc, Cary, NC). Patients who continued being treated at the end of follow-up were censored at that time and contributed information to the survival curve (as cumulative probability of “survival” on treatment) until that date only.

Multivariate analyses to identify independent determinants of acarbose renewal and treatment persistence were conducted using multiple logistic regression and the Cox proportional hazards model, respectively. The latter time-to failure analysis also controlled for the duration of the index dispensation. Potential modifiers of the assumed multiplicative relation among model covariates were also investigated. These evaluated the potential for (1) variable predictivity of the type of prescribing specialist (endocrinologist vs internist or others) depending on the initial acarbose dosage, antecedent use (indicated by a filled prescription) of insulin or other oral antidiabetic agents, and CDS and (2) variable predictivity of consultation with a gastroenterologist after the index prescription depending on the initial daily dose of acarbose; sex, age, prescribing specialist, and habitation outside metropolitan Montreal, Quebec. Analyses were conducted separately within the two cohorts until a best model was selected in each. Interactions among covariates in the best first-order multivariate model were also tested. A liberal α = .2 was used for the testing of interaction terms. The final analyses for each cohort included all variables observed to be important independent determinants of the respective outcome (odds of renewal in the case of multiple logistic regression and persistence of treatment in the Cox regression) in either cohort.

BASELINE CHARACTERISTICS

Characteristics of new users of acarbose at the index dispensation are summarized in Table 1. Mean age at the date of the index dispensation was 51 years for SARs and 72 years for seniors. In the former cohort, only 7% were 35 years or younger at the index date. Sixty-two percent of the SAR cohort and 55% of the seniors cohort were women. The regional distribution was similar in the two cohorts, with a third of the members living in metropolitan Montreal. None of the patients had consulted a gastroenterologist in the year before the index date. Comorbidity, as indicated by the CDS, was only slightly higher in the seniors than in the SAR cohort. Most first acarbose dispensations were prescribed by endocrinologists (56% of SARs and 62% of seniors) or internists (36% of SARs and 29% of seniors), with only a small proportion being prescribed by general practitioners or other physicians (8% of SARs and 9% of seniors). The dosage of acarbose did not differ between the two cohorts; 94% of index dispensations were for 50- mg units, with the remainder in 100-mg units; the median initial daily dose was 100 mg. During the study period, the recommended initial daily dose was 75 mg.15

With respect to concomitant antidiabetic agents, a slightly greater proportion of SARs (49%) than seniors (41%) were prescribed acarbose alone at the index date; a slightly lower proportion of SARs (38%) than seniors (49%) were prescribed another oral agent (without insulin) concomitantly with acarbose. At the time of the study, sulfonylureas were the only other oral antidiabetic agents approved as concomitant agents13 and were, in fact, the only other oral antidiabetic agents coprescribed acarbose with a sulfonylurea and insulin. The coprescription of insulin and sulfonylureas was formally approved in 1999.16

USE OF OTHER ANTIDIABETIC AGENTS

Most patients (57% in the two cohorts combined) were initially prescribed acarbose in combination with another agent, and coprescribed antidiabetic agents were generally those that patients had used before acarbose. Acarbose is therefore generally being used as recommended,1 ie, as an add-on to previous therapy, whether

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that be diet alone (first line), other oral antidiabetic agents (second line), insulin alone (third line), or insulin plus other antidiabetic oral agents (fourth line).

From the perspective of antecedent use of other antidiabetic agents, among SARs, the largest group of new users were prescribed acarbose as a first-line agent (44%), with successively smaller proportions being prescribed acarbose as a second- (39%), third- (9%), or fourth- (7%) line agent. Among seniors, however, most new users were prescribed acarbose as a second-line agent (52%), with successively smaller proportions being prescribed acarbose as a first- (35%), third- (9%), or fourth- (4%) line agent.

**FREQUENCY OF FIRST RENEWAL**

Seventy-three percent of SARs and 80% of seniors ever renewed their first dispensation of acarbose; among these ever-renewers, similar proportions in each cohort (83% of SARs and 81% of seniors) were what we termed “compliant renewers.” Expressed as a proportion of all new users in the defined cohorts, 60% of SARs and 65% of seniors renewed their first dispensation of acarbose within the permissible gap.

**PERSISTENCE WITH ACARBOSE TREATMENT**

Survival curves depicting persistence with acarbose treatment are given in the figure. In both cohorts, a sharp drop (corresponding to 27% of SARs and 22% of seniors) in the number of patients persisting with treatment was observed 45 days after the index date, which corresponds to the end of the permissible renewal interval after a 30-day dispensation; 30 days is in fact the most frequent duration of all prescriptions among seniors in Quebec.13 The survival curves for the 2 cohorts remained roughly parallel in their descent from 45 days after the index dispensation. Only a small proportion of new users (16% of SARs and 20% of seniors) persisted with treatment for a full year. Median persistence survival with acarbose treatment was 79 days (95% confidence interval [CI], 73-105 days) in SARs and 101 days (95% CI, 85-109 days) in seniors (P = .14 by log-rank test).

**DETERMINANTS OF PERSISTENCE OF ACARBOSE TREATMENT**

**Table 2** provides crude and adjusted rate ratios (RRs) and 95% CIs for determinants of persistence of use of acarbose that were observed to be important in either of the 2 cohorts based on Cox proportional hazards regression. In addition to the control variable (duration of the index dispensation), the final Cox model included 5 variables that were observed to be statistically significant and independent predictors of acarbose persistence among seniors. In order of relative size (from largest to smallest RR point estimate in a model predicting failure to persist), these 5 determinants included previous insulin use, initial daily acarbose dose, consultation with a gastroenterologist after the index dispensation, CDS, and prescribing physician (endocrinologist vs other). Only 1 of these (prescribing physician) retained significance in the analysis in the SAR cohort, although there was substantial overlap between cohorts in 95% CIs for the estimated RRs associated with initial daily dose, gastroenterologist consultation after the index dispensation, and CDS. Although only marginal differences were observed between crude and adjusted RRs (Table 2), all RRs given below are adjusted (for the other predictors and

| Table 1. Characteristics of New Users of Acarbose at the Index Dispensation* |
|-------------------------------------|---------------------|---------------------|
|                                     | Social Assistance Recipients Cohort | Seniors Cohort |
|                                     | (n = 216)               | (n = 677)           |
| Ages, y                             | 21-35: 16 (7.4)         | NA                  |
|                                     | 36-45: 40 (18.5)        | NA                  |
|                                     | 46-55: 79 (36.6)        | NA                  |
|                                     | 56-64: 81 (37.5)        | NA                  |
|                                     | 66-74: NA               | 535 (79.0)          |
|                                     | 75-84: NA               | 142 (21.0)          |
| Age, mean ± SD, y                   | 50.9 ± 9.2             | 71.9 ± 4.7          |
| Sex                                 | Male: 81 (37.5)         | 303 (44.7)          |
|                                     | Female: 135 (62.5)      | 374 (55.2)          |
| Region                              | Eastern Quebec: 44 (20.4) | 144 (21.3)         |
|                                     | Western Quebec: 101 (46.8) | 315 (46.5)      |
|                                     | Metropolitan Montreal: 71 (32.9) | 218 (32.2)    |
| Chronic disease score               | 1-2: 115 (53.2)         | 295 (43.6)          |
|                                     | 3-7: 81 (37.5)          | 319 (47.0)          |
|                                     | ≥8: 20 (9.3)            | 64 (9.5)            |
| Prescribing specialist              | Internist: 78 (36.1)    | 197 (29.1)          |
|                                     | Endocrinologist: 121 (56.0) | 421 (62.2)    |
|                                     | Other: 17 (7.9)         | 59 (8.7)            |
| Initial daily acarbose dose, mg     | ≤75: 91 (42.1)          | 295 (43.6)          |
|                                     | 76-125: 36 (16.7)       | 149 (22.0)          |
|                                     | ≥126: 89 (41.2)         | 233 (34.4)          |
| Concomitant antidiabetic agents     | None: 106 (49.1)        | 275 (40.6)          |
|                                     | Sulfonylureas only: 82 (38.0) | 332 (49.0)    |
|                                     | Insulin only: 21 (9.7)  | 61 (9.0)            |
|                                     | Sulfonylureas and insulin: 7 (3.2) | 9 (1.3)        |

* Data are given as number (percentage) except where indicated otherwise. NA indicates not applicable.
duration of the index dispensation) for between-cohort comparability.

The strongest (highest RR) determinant among seniors, namely, previous insulin use, was not an important predictor of persistence of use of acarbose among SARs. Seniors who had received insulin in the year before their initial acarbose dispensation were 1.59 times (95% CI, 1.24-2.04) less likely to persist with treatment at any given time after the index dispensation (conditional on survival until that time) than were seniors who had not received insulin before acarbose. Analysis of the data from both cohorts combined suggested that the difference between cohorts in the importance of the effect of previous insulin use is a result of age rather than of any other (eg, socioeconomic) difference between the cohorts. An interaction between the terms for previous insulin use and age (as a dichotomous variable with a cutoff value of age 35 years) was statistically significant, and the overall model fit was identical to a combined model in which age and its interaction with previous insulin use were replaced by a variable for cohort. The effect of previous insulin use on acarbose persistence is thus associated with (and limited to) advanced age. Age was not an important explanatory variable in any of the within-cohort analyses.

Seniors receiving their first prescription from an endocrinologist were 1.36 times (95% CI, 1.15-1.64) more likely to persist with treatment (ie, the inverse of the RR predicting failure to persist) at any given time after the index dispensation than were those who received their first prescription from an internist or other physician. Similarly, SARs receiving their first prescription from an endocrinologist were 1.56 times (95% CI, 1.14-2.13) more likely to persist with acarbose treatment than were those who received their first prescription from another specialist.

Seniors who began taking acarbose at a higher daily dose (>100 mg) were 1.39 times (95% CI, 1.17-1.66) as likely to discontinue treatment at any given time after the index dispensation (conditional on remaining on treatment to that time) than were those who were started at a lower dose. In both cohorts, only compliant renewers modified their initial daily dose. Among compliant renewers, however, a similar majority of patients within each cohort maintained their initial dose (59% of SARs and 60% of seniors). Of compliant-renewing SARs, 2% reduced their acarbose dose and 39% increased their dose at some point after the index date. Among compliant-renewing seniors, the respective figures were 3% (reductions) and 37% (increases). These figures are consistent with the fact that those who persisted tended to receive lower initial doses.

Seniors who consulted a gastroenterologist at some time within the observation period after their initial acarbose dispensation were 1.31 times (95% CI, 1.03-1.67) more likely to discontinue treatment at any given time after the index dispensation (conditional on having remained on treatment until that time) than were those who did not consult a gastroenterologist during follow-up.

Each increment (on a 3-point scale) of chronic disease was associated among seniors with a 1.16 times (95% CI, 1.01-1.32) higher probability of persisting with acarbose treatment at any given time (ie, the inverse of the RR for failing to persist).

Logistic regression analyses to predict renewal (by either definition: ever or compliant renewal) of the first dispensation yielded the same set of predictors as those discussed above based on the time-to-event analysis. As expected, however, the dichotomous renewal outcomes resulted in less precise RR (as odds ratio) estimates than did the modeling of the continuous outcome of days of treatment (additionally adjusted for duration of index dispensation). No substantive differences were observed between the results of the logistic regression and time-to-event analyses.

### Table 2. Crude and Adjusted Rate Ratios From Cox Regression Analyses Predicting Failure to Persist With Acarbose Treatment

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Social Assistance Recipients Cohort</th>
<th>Seniors Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crude</td>
<td>Adjusted</td>
</tr>
<tr>
<td>Previous insulin use</td>
<td>0.82 (0.55-1.24)</td>
<td>0.87 (0.57-1.33)</td>
</tr>
<tr>
<td>Initial daily acarbose dose &gt; 100 mg</td>
<td>1.04 (0.77-1.34)</td>
<td>1.05 (0.78-1.41)</td>
</tr>
<tr>
<td>Gastroenterologist consultation after the index date</td>
<td>1.03 (0.65-1.62)</td>
<td>1.28 (0.79-2.07)</td>
</tr>
<tr>
<td>Chronic disease score*</td>
<td>0.89 (0.71-1.13)</td>
<td>0.86 (0.67-1.09)</td>
</tr>
<tr>
<td>Index prescription from an endocrinologist</td>
<td>0.71 (0.53-0.96)</td>
<td>0.64 (0.47-0.88)</td>
</tr>
</tbody>
</table>

* Per increment on a 3-point scale.

Compliance can be broadly defined as “the extent to which the patient’s actual history of drug administration corresponds to the prescribed regimen.” Persistence, as objectively defined herein, is the duration of treatment during which minimal adherence (the proportion of pills dispensed presumed to have been consumed) is 66%. The proportion of new acarbose users who persisted for 1 year with what is intended to be lifelong treatment was only 16% among SARs and 20% among seniors. Our definition of persistence seemed to be robust, revealing similar (but more precise) predictors as those observed in multivariate analyses of ever-renewal of the first dispensation and what we termed “compliant renewal” of the first dispensation.

The population-based study of drug persistence using time-to-event methods is a recent phenomenon; few peer-reviewed studies have been published and none have
addressed antidiabetic agents. Of drugs for which comparable data exist, acarbose demonstrates among the lowest measured persistence. One-year persistence was 35.6% in a cohort of Quebec seniors who began inhaled corticosteroid treatment for chronic obstructive pulmonary disease in 1995 and 55% (amlodipine) and 63% (felodipine) in Quebec seniors started on 1 of 2 calcium channel blockers in 1990. Six-month persistence was 80% to 89% for various antihypertensive agents in Saskatchewan patients newly diagnosed as having hypertension between 1989 and 1994, compared with 32.8% for acarbose among Quebec seniors. Only incontinence agents show lower persistence rates than does acarbose; at 6 months persistence was 11.4% and 5.7% for oxybutynin chloride and flavoxate hydrochloride, respectively, among Quebec seniors started on 1 of 2 such agents between 1994 and 1997.

Among the 5 factors observed to be important predictors of acarbose persistence in either cohort, only 1—prescribing specialist—was predictive in seniors and SARs. The observation that patients who were prescribed their initial dispensation by an endocrinologist were more persistent with treatment might be indicative of greater persuasiveness of these specialists or of inherent differences in compliance among patients referred to these specialists.

Four factors (previous insulin use, initial daily acarbose dose, gastroenterologist consultation after the index dispensation, and CDS) were predictive of acarbose treatment persistence within the seniors cohort only. For 2 of these factors (previous insulin use and initial daily acarbose dose), between-cohort differences were statistically significant ($P < .10$ for interaction terms between cohort and each of these factors in an analysis of the 2 cohorts combined).

A relatively higher initial daily dose ($\geq 100$ mg) was an independent determinant of compliant acarbose treatment discontinuation among seniors but not SARs, which is possibly suggestive of a greater susceptibility to dose-dependent adverse effects among seniors. Such a suggestion is supported by the additional importance (adjusted for initial daily dose and the 4 other covariates) of the gastroenterologist consultation after the index dispensation in this cohort. The finding of an important relative risk of consultation with a gastroenterologist in the (minimum 4-month) period of observation after the initial (index) acarbose dispensation in seniors (among whom none had consulted a gastroenterologist in a minimum 1-year period antecedent to the index dispensation) is surprising. This is perhaps because prescribing physicians are inadequately informed of or are inadequately informing their patients of the anticipated gastrointestinal tract adverse effects and the expected diminution of these adverse effects over time.

The importance of initial daily dose and a marker of gastrointestinal tract adverse effects underscore the importance for clinicians to (1) start patients on lower doses of acarbose, upwardly adjusting the dose gradually as tolerance increases, and (2) discuss the anticipated gastrointestinal tract adverse effects and their expected diminution over time during acarbose treatment with prospective acarbose recipients to improve persistence and prevent waste of health care resources on (a) prescriptions of acarbose to patients who are unlikely to persist long enough to gain any benefit and (b) unnecessary gastroenterologist consultations.

This study of new acarbose users is subject to several limitations, the most prominent of which are discussed in the following paragraphs. The first limitation concerns the generalizability of the results of this study to other periods and other regions. We cannot know whether the patients we observed here, who were among the first diabetic patients in Quebec to be started on treatment with the novel antidiabetic agent acarbose, are representative of patients who might have been first given this agent in other places or at other times (eg, at some later time with respect to the introduction of the agent to the formulary).

The second limitation concerns the source of the data; we were limited herein to information routinely collected in the provincial health plan’s administrative databases. The available data indicate only drugs dispensed rather than drugs consumed. We could therefore infer persistence only from the fact of continued (renewed) dispensations. We may thus have overestimated persistence. Moreover, it is possible that some patients who received disbursements of acarbose never actually took any of the medication.

Also unavailable to us was clinical information regarding the efficacy of acarbose treatment in controlling blood glucose levels and qualitative information such as one might ascertain from patient interview. Without the former, it is not possible to verify whether patients stopped taking the medication because of lack of efficacy. The latter would have provided insight into subjective reasons for discontinuation of the drug use, such as a belief that the treatment is ineffective or that the adverse effects were not balanced by enhanced feelings of wellness.

In conclusion, the present analysis revealed low levels of persistence of acarbose use, the first of the newest class of antidiabetic agents, among SARs and seniors in the province of Quebec. In both populations, patients who received their initial prescription from an endocrinologist as opposed to an internist or other practitioner demonstrated better persistence with acarbose treatment. Among seniors, patients with diabetes who demonstrated better persistence with acarbose included those not dependent on insulin and those who received a lower initial daily dose of the drug.

As emphasized by Urquhart, “substandard compliance would be of only minor concern if it were not so prevalent or if it were limited to medical conditions of a self-limiting or otherwise minor nature.” Studies such as the present one, which describe drug discontinuation and its determinants, are an important first step to improving compliance with an otherwise safe and effective drug.

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