ABSTRACT

Objective: To elicit information using patient surveys regarding the impact of attention-deficit/hyperactivity disorder (ADHD) treatments for adults beginning treatment with lisdexamfetamine dimesylate (LDX), a prodrug stimulant approved for the treatment of ADHD in adults and children 6–12 years of age.

Methods: Adult patients with ADHD beginning treatment with LDX voluntarily completed surveys through an automated telephone system or the Internet at the onset of and 6 weeks after initiating LDX treatment. Prescribing physicians received individual reports of the responses for each survey completed by their patients. All patients who completed both baseline and 6-week surveys were included in the analyses. Subgroup analyses by drug class and duration were conducted for those previously treated for ADHD.

Results: Treatment with LDX was associated with a significant decrease in ADHD symptom interference with work and school tasks, social and leisure activities, and personal relationships (P < .01; N = 2,660). Patients gave higher satisfaction ratings with LDX than with their previous treatment, regardless of the type of prior medication (P < .01). On average, global improvement, tolerability, convenience, and satisfaction with LDX were all highly rated.

Conclusion: Patients treated with LDX showed significant symptom improvement and reported a higher level of satisfaction versus previous treatments.

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is a common psychiatric condition in children, with an estimated...
worldwide prevalence of ~5.3%. However, ADHD is not exclusively a childhood disease; many children with ADHD experience symptoms into adolescence and adulthood. Overall, ADHD is estimated to affect 4.4% of adults in the United States and 3.4% of adults worldwide. In adults, as in children, ADHD is characterized by significant impairment in multiple domains of functioning. The economic burden of adult ADHD also places a burden on other areas of society and the economy. In a survey of employed or self-employed US adults with or without ADHD, those with ADHD had an excess of ~22 days of lost role performance (days absent or with reduced quantity or quality of work) per year compared with respondents without ADHD.

Stimulants have been used to treat symptoms of ADHD for several decades, and recent guidelines, including those developed by the Texas Consensus Conference Panel on Pharmacotherapy of Childhood Attention-Deficit/Hyperactivity Disorder and the American Academy of Child and Adolescent Psychiatry, confirmed the use of these agents for the first-line treatment of ADHD. Overall, methylphenidate (MPH) and amphetamines are considered equally effective in managing ADHD symptoms; however, some patients respond better to one drug than to others. Thus, identifying treatment that is effective and tolerable for individual patients often requires the use of trial and substitution.

Long-acting stimulants are associated with certain clinical benefits compared with short-acting medications, which do not have an approved clinical indication in adults with ADHD. Recent studies suggest that long-acting stimulant formulations demonstrate improved efficacy, adherence, patient satisfaction, and a longer median duration of use in adults with ADHD. However, for many long-acting stimulants, the duration of action can be variable. There are differences in the mechanisms by which formulations control delivery of the drug, and some medication delivery systems may be affected by changes in gastrointestinal (GI) pH or transit time.

Lisdexamfetamine dimesylate (LDX) is the first long-acting prodrug stimulant; its therapeutic activity is unlikely to be affected by GI pH and variations in normal GI transit times. LDX is indicated for the treatment of ADHD in children 6–12 years of age and adults ≥18 years of age. As a prodrug, LDX is a therapeutically inactive molecule outside of the body. After oral ingestion, LDX is converted to l-lysine and active d-amphetamine, which is responsible for the therapeutic effect. While a small amount of LDX may be hydrolyzed to d-amphetamine in the GI tract, the conversion of LDX into active d-amphetamine occurs primarily in the blood; thus, drug delivery is unlikely to be affected by changes in GI parameters. In a clinical trial in healthy adults, d-amphetamine was consistently delivered within individual patients and between patients following LDX administration.

LDX was effective and well tolerated, with a safety profile consistent with long-acting stimulant use in a randomized controlled trial (RCT) in adults. Common adverse events associated with LDX included dry mouth, decreased appetite, and insomnia. In a simulated workplace environment study, LDX demonstrated efficacy from 2–14 hours postdose. RCTs have become routine in all fields of medicine and the standard for assessing treatment effectiveness. However, RCTs have limitations due to selection criteria, finite duration of treatment, and other artificial aspects of the clinical trial environment. While RCTs provide important information on the efficacy and tolerability of LDX in adults, the results may not always be applicable to the experience of the practicing physician in gauging treatment impact and patient satisfaction. There is a need for information from the clinical practice setting which may provide insight on treatment adherence and patient impressions of the impact of treatment on their lives.

Though survey data are considered less rigorous than data gathered in controlled clinical trials, surveys nevertheless have advantages in that they can include more subjects and can provide useful information on a range of topics relevant to the patient’s perception of how treatment is affecting the impact of ADHD on their lives. If carefully and appropriately constructed, surveys can provide a great deal of insight beyond clinical trial end points into how treatment affects patients in real-world settings —information that may be valuable in optimization of treatment. Although trained rater information in the context of RCTs abounds, there remains a dearth of information from patients outside the clinical trial setting. The perspectives of patients and the way they rate symptoms and their impact may be very different from those of trained raters. It is helpful to assess how adults perceive LDX treatment relative to its impact on reducing symptoms and to their previous experiences with other ADHD treatments. To evaluate these issues, the authors of this article developed a survey for patients enrolled in the Vyvanse New Start Program. The survey was designed to provide information to prescribing physicians about patient impressions of LDX treatment for the management of their ADHD symptoms and to relate these impressions to functional outcomes.

The authors present the survey results from baseline and 6 weeks after initiating treatment with LDX among adult patients with ADHD enrolled in the Vyvanse New Start Program. They also present subgroup analyses of patients who switched to LDX from other amphetamine-based stimulant treatment options; an MPH-based stimulant treatment option; a nonstimulant treatment option; an immediate-release (IR) stimulant treatment option; and any other extended-release (ER) stimulant treatment option.
METHODS

The methods utilized in this analysis are similar to those used in a previous study that examined survey results from parents of pediatric patients with ADHD newly started on LDX treatment. Both programs were designed and implemented by InfoMedics, Inc., Reading, MA.

The Vyvanse New Start Program

The Vyvanse New Start Program was designed to engage patients in providing feedback to their treating physician about their experience using LDX. The first objective of the program was to obtain information from patients being treated with LDX regarding their perceptions of the impact of their ADHD symptoms on multiple domains of life, and their assessment of the effect of LDX treatment on these; the second objective was to assess their overall medication satisfaction in a real-world environment. This information was then reported to the prescriber. The survey, however, was not designed to establish comparative clinical efficacy. Data from the Vyvanse New Start Program were obtained from prospective surveys conducted nationwide and completed by patients ≥18 years of age, for whom LDX is indicated, who were initiating treatment with LDX. Patients opted into the Vyvanse New Start Program via Shire’s Focus Program—an Internet-based, patient-support endeavor which provides free practical tools and tips on how to improve focus and organization and how to track progress in treatment. There were no preconditions on patient participation based on prior treatments or reasons for initiating LDX.

Data collection is ongoing. Evaluable data presented here were collected from surveys conducted from June 2008 through August 2009 and completed either via telephone, using interactive voice-response technology, or through a secure Web site. Patients accessed the automated system or Web site to complete surveys by entering selected personal information to identify and verify their records in the database. Upon voluntary enrollment in the program, patients acknowledged their agreement to participate and provided consent. Patients were instructed to complete three clinician-designed surveys: a baseline survey prior to LDX initiation, a follow-up survey ~3 weeks after initiation, and a follow-up survey ~6 weeks after initiation. The first follow-up was completed 16–34 days (~3 weeks) following the initiation of treatment with LDX. If <16 days had passed, patients trying to access the survey were instructed that they were responding too early and to return on the date representing 3 weeks from the baseline survey date. If ≥35 days had passed since the baseline survey was completed, patients would fill out the second follow-up survey, regardless of whether they had participated in the first follow-up survey. Patients could take the second follow-up at any time after at least 35 days had passed since baseline; no maximum number of days was established.

Physicians received a summary of the responses for each survey completed by their patients. Physicians could receive up to three reports for each patient participating in the program. After completing the final survey, patients received a progress report summarizing their responses for all completed surveys and a $25 coupon toward their next prescription of LDX.

Survey Content

Survey questions were designed in consultation with four independent clinicians who are experts in the treatment of ADHD (authors of this manuscript). The questions included in the baseline survey are presented in Table 1. Topics included the importance of features of ADHD medications; whether ADHD was diagnosed in childhood or adulthood; use of prescription medication for ADHD prior to LDX; satisfaction with prior medication; most bothersome symptom; severity of individual symptoms; time of day that symptoms returned; and level of interference of symptoms on specified functional domains. Questions in the follow-up surveys are presented in Table 2. Topics included compliance with LDX regimen; severity of individual symptoms; time of day that symptoms returned; level of interference of symptoms; global assessment of symptom improvement; satisfaction with treatment; convenience and tolerability of LDX; and intent to continue treatment. During each survey, patients listened to a disclaimer stating that they must still consult their doctor if they have any concerns regarding medical treatment, and received information regarding important safety issues, possible adverse effects, and how to access additional information about LDX.

Statistical Analyses

Survey responses were summarized and reported as means or frequency distributions, as appropriate. All analyses were conducted using SPSS v.16.0.2. The statistical comparisons were generated as post hoc analyses. Ratings at baseline were compared with those at follow-up for each measure. The Wilcoxon signed rank test was used to evaluate those differences in ratings in the level of interference of ADHD symptoms with work/school tasks, social/leisure activities, and personal relationships, as well as differences in how much patients reported experiencing each symptom. The Wilcoxon signed rank test was used to assess the statistical significance of the difference in satisfaction with prior prescriptions and satisfaction with LDX.

Analyses were conducted with the full data set representing data from all who completed the baseline and 6-week follow-up surveys, and subsets of this population who reported use of the following medications prior to LDX: any mixed amphetamine salts (MAS or MAS-XR), any MPH (MPH-IR,
osmotically controlled MPH-ER, dexamphetamine ER), a nonstimulant (atomoxetine hydrochloride), any short-acting medication (MAS, MPH-IR), or any long-acting medication (MAS-XR, osmotically controlled MPH-ER, dexamphetamine ER, atomoxetine hydrochloride). Sub-analyses were conducted according to type of previous medication. For patients whose previous ADHD medication included something other than those listed above, the medication was referred to as “another type.”

### RESULTS

#### Baseline Survey Results

A total of 15,053 participants completed the baseline survey, and 2,660 completed the baseline and 6-week follow-up survey. The average time on LDX treatment at 6-week follow-up was 59 days (range, 35–277 days). Of those who completed the 6-week follow-up survey, 66% were female, 15% were

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**TABLE 1**

**QUESTIONS FROM BASELINE SURVEY**

**Diagnosis Module**

1. Diagnosed with ADHD as a child before turning 18 years of age?

2. What was the most bothersome symptom that caused you to seek medical attention? (Note: patients could only select one symptom.)
   - A. Problems with distraction and inability to focus
   - B. Trouble organizing tasks
   - C. You delayed starting tasks
   - D. Restlessness
   - E. Being impulsive
   - F. Another symptom not listed

3. Do you have any children? – Y/N
   If yes, do you have a child that has been diagnosed with ADHD? – Y/N

**Prior Medication Module**

1. Before starting LDX, were you taking any prescription medication for your ADHD? – Y/N
   If yes, which of the following medications were you most recently taking? (Note: patients could only select one medication.)
   - A. Amphetamine and dextroamphetamine tablets
   - B. Amphetamine and dextroamphetamine XR capsules
   - C. Methylphenidate (Concerta)
   - D. Dexamphetamine XR
   - E. Methylphenidate (Ritalin)
   - F. Atomoxetine
   - G. Another medication
   - H. Not sure

   (For subsequent questions in this module, participants selected a number from 1–9, with 1 being “not at all” and 9 being “very much.”)

2. Before starting Vyvanse, how much were you distracted and not able to focus?

3. How much difficulty did you have with organizing tasks and keeping track of things?

4. How much did you avoid or delay starting tasks?

5. Before Vyvanse, how restless were you?

6. How much did you make decisions suddenly or impulsively?

**Symptom Control Module**

Before starting LDX, when did your symptoms start to return?

- A. Prior to 2 PM
- B. 2–4 PM
- C. 4–6 PM
- D. 6–8 PM
- E. After 8 PM

**Impact of Symptoms Module**

(In this module, participants selected a number from 1–9, with 1 being “did not interfere” and 9 being “completely interfered.”)

1. Before starting LDX, how much did your ADHD symptoms interfere with completing your normal tasks at work or school?
2. How much did your symptoms interfere with your social and leisure activities?
3. How much did your symptoms interfere with your personal relationships with family and friends?

**Medication Satisfaction Module**

(If participant answered yes to prior medication)

On a scale of 1–9, how satisfied were you with your prior prescription medication for ADHD? (Choose any number from 1–9, with 1 being “not at all satisfied” and 9 being “very satisfied.”)

**Medication Opinion Module**

(In this module, participants selected a number from 1–9, with 1 being “not at all important” and 9 being “very important.”)

1. How important is it to you that your ADHD medicine feels like it starts working smoothly without feeling it “kick in”?
2. When your ADHD medication wears off at the end of the day, how important is it that it feels like it wears off smoothly, without feeling physical or emotional changes?
3. How important is it that you do not feel too flat or not yourself while taking your medication?

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ADHD = attention-deficit/hyperactivity disorder; Y/N = yes/no; LDX = lisdexamfetamine dimesylate; XR = extended release.

diagnosed prior to 18 years of age, and 60% had children, of which 43% reported having a child who had also been diagnosed with ADHD. Most patients had no prior medication for ADHD (53%). The proportions of patients taking other medications for ADHD are presented in Table 3.

When asked to rate the importance (1=not at all important; 9=very important) of specific features of their ADHD medication, all three features were rated, on average, above 6 out of 9 (Figure 1). Those diagnosed with ADHD at ≥18 years of age were asked at baseline to identify their most bothersome ADHD symptom that prompted them to seek medical attention; inability to focus was reported by the largest percentage of patients (62%), followed by difficulty organizing tasks (14%) and avoiding/delaying starting tasks (12%; Figure 2).

### 6-week Follow-up Survey Results

Patients who completed the 6-week follow-up survey reported high levels of adherence to the prescribed regimen. Most patients (74%) reported that they took every dose as directed, 19% almost every dose, 5% most doses, and 3% half the doses or fewer. Patients reported significant improvements (P<.01 vs. before LDX) in ADHD symptom ratings and ADHD symptom interference with functioning (mean baseline rating vs. rating at 6 weeks) following treatment with LDX (Figures 3 and 4). Using 9-point scales (1=not at all; 9=very), patients also indicated that treatment with LDX resulted in substantial global improvement (mean rating of 6.3), tolerability (7.3), convenience (7.8), and satisfaction (6.9). Most patients (82%) intended to continue with LDX treatment, 3% did not intend to continue, and 15% were undecided.

### Sub-analyses of Patients Who Received Prior ADHD Medication

Among patients who had previously been prescribed a different ADHD medication (n=1,256), most (65%) reported that their symptoms returned later in the day with LDX than with their previous treatment (Figure 5A).
patients who felt that LDX had a longer-lasting effect than their previous medication was almost identical, regardless of what their previous medication was (Figure 5B–D) and whether the previous medication was short- or long-acting (Figure 5E–F). Patients who reported that their symptoms returned later with LDX than with their previous treatment (n=812) also reported greater satisfaction with LDX (7.1 on 9-point scale) than patients who reported either that their symptoms returned at the same time with both treatments (n=288; 6.1 on 9-point scale) or that their symptoms returned earlier with LDX than with previous treatment (n=156; 5.8 on 9-point scale).

A majority of patients reported that with their previous medication, symptoms returned either prior to 2 PM (37%) or between 2–4 PM (32%). In contrast, in this subset of patients with prior medication, 52% reported that symptoms returned after 6 PM with LDX treatment (Figure 6A). This pattern was apparent regardless of the type of medication previously received (Figure 6B–D) and whether the previous medication was short- or long-acting (Figure 6E–F).

Among patients who had previously been prescribed a different ADHD medication (n=1,256), a higher satisfaction level was reported with LDX treatment than with the previ-
ous treatment (mean 6.7 vs. 5.0 on 9-point scale; \( P < .01 \)). This was true regardless of the type of prior medication (any MAS, any MPH, the nonstimulant atomoxetine hydrochloride) and whether the treatment was short- or long-acting (Table 4). Patients previously treated with atomoxetine hydrochloride reported the lowest satisfaction with prior medication (3.4) and the highest satisfaction with LDX (7.1; Table 4). Patients previously treated with any MPH had the second lowest satisfaction with prior medication (4.6) and the second highest with LDX (7.0; Table 4).

DISCUSSION

The Vyvanse New Start Adult Survey was designed to provide information to prescribing physicians regarding patient impressions of treatment with LDX and the extent to which LDX controls symptoms of ADHD in adult patients. At baseline, patients rated “not feeling too flat while taking medication” and feeling as if the medication “wears off smoothly” as important features of their treatment. This provides useful insight for treatment adherence; knowing...
what patients are expecting from medication is important in that appropriately met expectations for treatment can improve satisfaction with the treatment regimen and can influence treatment continuation.25

At baseline, >60% of patients reported that being distracted or unable to focus was their most bothersome symptom of ADHD. This aligns with the finding that the majority of adults with ADHD present with symptoms of inattention.26 After an average of 59 days of LDX treatment, patients reported improvements in their ADHD symptoms and significantly less interference of ADHD symptoms with work/school tasks, social/leisure activities, and personal relationships compared with before the use of LDX. Patients also reported a high rate of adherence, rated the dosage regimen as very convenient, rated LDX as well tolerated, and reported that they were very satisfied with LDX. Patients who had received a prior prescription for a different ADHD medication expressed greater satisfaction with LDX than with their prior prescription.

The overall pattern of results of the current analysis is in accordance with that of a previous study24 examining survey results from parents of pediatric patients with ADHD newly treated with LDX. In the pediatric study, the most bothersome

**FIGURE 6**

**TIME OF RETURN OF ADHD SYMPTOMS WITH PRIOR MEDICATION AND WITH LDX TREATMENT**

A. All patients with prior medication

<table>
<thead>
<tr>
<th>Timing of Return of Symptoms</th>
<th>Before LDX</th>
<th>With LDX (average 59 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 2 pm</td>
<td>37%</td>
<td>11%</td>
</tr>
<tr>
<td>2–4 pm</td>
<td>32%</td>
<td>19%</td>
</tr>
<tr>
<td>4–6 pm</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>6–8 pm</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>After 8 pm</td>
<td>24%</td>
<td>7%</td>
</tr>
</tbody>
</table>

B. Patients who switched from MAS or MAS-XR

<table>
<thead>
<tr>
<th>Timing of Return of Symptoms</th>
<th>Before LDX</th>
<th>With LDX (average 58 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 2 pm</td>
<td>34%</td>
<td>12%</td>
</tr>
<tr>
<td>2–4 pm</td>
<td>33%</td>
<td>20%</td>
</tr>
<tr>
<td>4–6 pm</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>6–8 pm</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>After 8 pm</td>
<td>23%</td>
<td>7%</td>
</tr>
</tbody>
</table>

C. Patients who switched from a MPH preparation

<table>
<thead>
<tr>
<th>Timing of Return of Symptoms</th>
<th>Before LDX</th>
<th>With LDX (average 58 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 2 pm</td>
<td>37%</td>
<td>8%</td>
</tr>
<tr>
<td>2–4 pm</td>
<td>34%</td>
<td>19%</td>
</tr>
<tr>
<td>4–6 pm</td>
<td>13%</td>
<td>20%</td>
</tr>
<tr>
<td>6–8 pm</td>
<td>11%</td>
<td>25%</td>
</tr>
<tr>
<td>After 8 pm</td>
<td>28%</td>
<td>5%</td>
</tr>
</tbody>
</table>

D. Patients who switched from atomoxetine hydrochloride

<table>
<thead>
<tr>
<th>Timing of Return of Symptoms</th>
<th>Before LDX</th>
<th>With LDX (average 57 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 2 pm</td>
<td>45%</td>
<td>13%</td>
</tr>
<tr>
<td>2–4 pm</td>
<td>27%</td>
<td>14%</td>
</tr>
<tr>
<td>4–6 pm</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>6–8 pm</td>
<td>21%</td>
<td>9%</td>
</tr>
<tr>
<td>After 8 pm</td>
<td>33%</td>
<td>10%</td>
</tr>
</tbody>
</table>

E. Patients who switched from a short-acting medication (MAS or MPH)

<table>
<thead>
<tr>
<th>Timing of Return of Symptoms</th>
<th>Before LDX</th>
<th>With LDX (average 58 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 2 pm</td>
<td>42%</td>
<td>13%</td>
</tr>
<tr>
<td>2–4 pm</td>
<td>33%</td>
<td>23%</td>
</tr>
<tr>
<td>4–6 pm</td>
<td>23%</td>
<td>16%</td>
</tr>
<tr>
<td>6–8 pm</td>
<td>7%</td>
<td>22%</td>
</tr>
<tr>
<td>After 8 pm</td>
<td>27%</td>
<td>5%</td>
</tr>
</tbody>
</table>

F. Patients who switched from a long-acting medication (MAS-XR, MPH preparation, or atomoxetine hydrochloride)

<table>
<thead>
<tr>
<th>Timing of Return of Symptoms</th>
<th>Before LDX</th>
<th>With LDX (average 58 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 2 pm</td>
<td>34%</td>
<td>10%</td>
</tr>
<tr>
<td>2–4 pm</td>
<td>32%</td>
<td>17%</td>
</tr>
<tr>
<td>4–6 pm</td>
<td>15%</td>
<td>19%</td>
</tr>
<tr>
<td>6–8 pm</td>
<td>25%</td>
<td>11%</td>
</tr>
<tr>
<td>After 8 pm</td>
<td>29%</td>
<td>8%</td>
</tr>
</tbody>
</table>

ADHD=attention-deficit/hyperactivity disorder; LDX=lisdexamfetamine dimesylate; MAS=mixed amphetamine salts; MAS-XR=MAS extended release; MPH=methylphenidate.
symptom was also attention or focus difficulties, which was reported by 60% of parents. Treatment with LDX was associated with a significant decrease in ADHD symptom interference with school activities, family interactions, homework, and social interactions. Parents rated their satisfaction with LDX treatment in their child as significantly higher than with their child’s previous treatment. On average, global improvement, tolerability, convenience, and satisfaction with LDX were all highly rated. Regardless of which medication had been used previously, patients reported higher satisfaction and longer duration of symptom control with LDX. The authors of this article assessed an additional variable in the current study—time of day that symptoms returned while receiving treatment with LDX or the patient’s prior medication. The data suggest a relationship between medication satisfaction and time of day that symptoms return. Treatments that allow for earlier return of symptoms may not be rated as satisfying as those treatments that provide for a later return of symptoms.

Previous studies have found that some patients respond preferentially to either amphetamines or MPH; however, adult patients in the present study who had previously been prescribed amphetamines or MPH responded favorably to LDX, with little difference between these two groups. Although adults with ADHD are as likely to be treated with a short-acting medication as with a long-acting one, subgroup analyses found that patients previously treated with a short- or a long-acting medication reported longer symptom control with LDX, with little difference in the response of these two groups. The use of surveys has several limitations. The symptomaticology of ADHD was broadly classified into only five categories: inability to focus, difficulty organizing tasks, avoiding/delaying starting tasks, restlessness, and impulsiveness. The affected activities were similarly defined only in general terms. Therefore, these survey instruments lack the specificity of formally validated quality-of-life questionnaires. The surveys were also available through the anonymity of the Internet or interactive telephone, and were not subject to immediate assessment and opportunity for clarification provided by questionnaires administered in a physician’s office. Though physicians and patients received a report that could be used at subsequent clinic visits, this would not provide clarification initially. Other limitations include a lack of placebo or active comparator, the potential effect of financial incentive on participants’ responses, and nonrandom sampling with a potential bias toward patients who were dissatisfied with their current medication or patients whose symptoms are not representative of the overall population.

In the authors’ survey, additional limitations may apply.

### Table 3

<table>
<thead>
<tr>
<th>Prior Medication</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1,404 (52.8%)</td>
</tr>
<tr>
<td>Mixed amphetamine salts*</td>
<td>264 (9.9%)</td>
</tr>
<tr>
<td>Mixed amphetamine salts extended release*</td>
<td>407 (15.3%)</td>
</tr>
<tr>
<td>MPH immediate release†</td>
<td>99 (3.7%)</td>
</tr>
<tr>
<td>Osmotically controlled extended-release MPH§</td>
<td>176 (6.6%)</td>
</tr>
<tr>
<td>Dexmethylphenidate extended release§</td>
<td>63 (2.4%)</td>
</tr>
<tr>
<td>Atomoxetine hydrochloride§</td>
<td>126 (4.7%)</td>
</tr>
<tr>
<td>Another type</td>
<td>109 (4.1%)</td>
</tr>
<tr>
<td>Not sure</td>
<td>12 (0.5%)</td>
</tr>
</tbody>
</table>

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**Primary Psychiatry**

Although the protocol recommended that respondents check in again at least 5 weeks after starting medication, the average time for the completion of the follow-up survey was ~8 weeks after starting medication, despite the use of e-mail reminders. Finally, as data were not collected on the medication doses received prior to switching to LDX, the authors cannot control for variability in perceived improvements on LDX that may result from the use of different dose regimens of the previous medication (which would have been administered according to real-world practices).

Despite these limitations, surveys provide an opportunity to get a snapshot of “real-world” information that is difficult to obtain from RCTs with their necessarily stringent inclusion/exclusion criteria, lack of observation in real-world settings, narrowly defined end points, and relatively small sample sizes. Survey-driven studies of real-world outcomes have also provided valuable data exploring relationships between patient satisfaction with medications and patient-reported compliance, as well as between patient satisfaction and symptom alleviation, which are typically not addressed in other types of study.

This survey included >2,000 patients reporting on their activity in everyday circumstances, and this large number of participants is a key strength of the survey method. Additionally, more patient treatment exposures and experiences can be described with this approach. Though there are limitations to using nonvalidated instruments and sampling methods that do not control for potential bias, there are advantages to having a broader scope of information collection. Thus, survey analyses such as those utilized in this study provide a useful complement to information on treatment effectiveness. In addition, they can present practical information for prescribing clinicians concerning patient perceptions of treatment.

CONCLUSION

Patients reported significant improvements in ADHD symptoms with LDX and high levels of satisfaction, tolerability, and convenience. Patients were able to rate satisfaction with their prior medication at the start of the survey, and their rating of satisfaction with LDX was higher than their initial rating of satisfaction with prior treatment. On prior medications, 69% of patients reported a return of symptoms before 4 PM, whereas with LDX, 70% reported a return of symptoms after 4 PM. Few studies have examined the relationship between patient satisfaction with medication, subsequent compliance or adherence to a treatment regimen, and real-world outcomes. Surveys are effective tools for soliciting information regarding these potential problems of treatment effectiveness that may be difficult to obtain in clinical trials.

REFERENCES

27. Trattler W, Katzic D, Kenney D. Self-reported compliance with topical cyclopentolate emulsion 0.05% and onset of the effects of increased tear production as assessed through patient surveys. Curr Ther. 2006;28(11):1848-1856.