Selegiline Transdermal System: Use Pattern and Adherence in Patients With Major Depressive Disorder

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ABSTRACT

Objective: To discern the pattern of use of selegiline transdermal system as well as the level of adherence relative to other pharmacotherapies for treatment of major depressive disorder.

Method: Deidentified patient-level data (2010–2011; N = 2,985) were abstracted from US longitudinal archives (Medicaid, Medicare, managed care) in this retrospective exploratory claims-based analysis. Major depressive disorder was defined as *ICD-9-CM* codes 292.2, 296.3, 300.4, or 311. Antidepressant treatment failure was defined as receipt of < 90 days of initial antidepressant.

Results: Most patients received selegiline transdermal system as a second or third treatment option following treatment failure, and only 71 patients received it as first-line therapy. Patients were more likely to receive selegiline transdermal system for 60, 90, or 180 days compared to other therapies irrespective of treatment failure ($P < .05$). Among patients who did not fail treatment in the first 90 days, selegiline transdermal system was associated with a greater probability of receipt compared to selective serotonin reuptake inhibitors or serotonin norepinephrine reuptake inhibitors at 120 days (odds ratio [OR] = 1.21; 95% CI, 1.14–1.47) and 180 days (OR = 1.09; 95% CI, 1.01–1.28).

Conclusion: Although limited by the small sample size of patients receiving selegiline transdermal system versus other pharmacotherapies, the results suggest that after antidepressant treatment failure, earlier use of selegiline transdermal system may be warranted.

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Monoamine oxidase inhibitors (MAOIs) have played an important role in psychiatry since the initial introduction of iproniazid into clinical practice as an antidepressant in the 1950s. While MAOIs are still considered to be highly effective antidepressants, the use of MAOIs for the treatment of depression has declined significantly, perhaps due to the risk of potentially serious side effects stemming from food and drug interactions (eg, a vasopressor effect as a consequence of inhibiting MAO in the gut, thereby leading to decreased clearance of dietary tyramine and elevated risk of serotonin syndrome when concomitantly administered with other serotonergic agents).

Selegiline is an irreversible inhibitor of MAO enzymes. Selegiline transdermal system provides a novel mechanism to overcome some of the safety concerns associated with oral administration.[1,2] The short-term and long-term safety and efficacy of selegiline transdermal system 6 mg/24 h (20 mg/20 cm^2), 9 mg/24 h (30 mg/30 cm^2), and 12 mg/24 h (40 mg/40 cm^2) have been previously studied in the treatment of major depressive disorder (MDD) in randomized, double-blind, placebo-controlled trials of 6, 8, and 52 weeks' duration. Selegiline transdermal system[3] is available in the 3 doses listed above.

In 1 selegiline transdermal system clinical trial,[1] more than 40% of the patients with MDD had failed at least 1 prior antidepressant treatment. Prior treatment failure with first-line therapies (eg, selective serotonin reuptake inhibitors [SSRIs], selective norepinephrine reuptake inhibitors [SNRIs]) may be due to treatment resistance and/or nonadherence to treatment instructions. In a large retrospective study of SSRIs, approximately 57% of patients were nonadherent to their prescribed antidepressant therapy within 6 months.[4] Almost one-third of patients treated for depression discontinue their antidepressant therapy in the first month of treatment.[5] The majority of patients discontinuing antidepressant therapy do not inform their physician of this change.

METHOD

Since adherence and health outcomes are strongly associated, we conducted a retrospective exploratory claims-based analysis to discern the following: the pattern (sequence) of use of selegiline transdermal system relative to other pharmacotherapies for treatment of MDD and the level of adherence to selegiline transdermal system relative to other antidepressant pharmacotherapies. Deidentified patient-level data (2010–2011) were abstracted from US longitudinal archives (Medicaid, Medicare, managed care). Major depressive disorder was defined as *ICD-9-CM* codes 292.2, 296.3, 300.4, or 311. Antidepressant treatment failure was defined as receipt of < 90 days of initial antidepressant. Criteria for inclusion were ambulatory patients aged 18 to 75 years with continuous enrollment ≥ 18 months (beginning 6 months prior to an *ICD-9-CM* code for MDD [index date]), enrollment ≥ 12 months postindex date, no *ICD-9-CM* code for a comorbid mental illness, and prescribed SSRI, SNRI, or selegiline transdermal system. Using an intent-to-treat approach, multivariate logistic regression was used to assess sequential use of antidepressant pharmacotherapy and adherence. Models were adjusted for age, gender, race, insurance coverage (Medicaid, Medicare, managed care), and Deyo/Charlson Comorbidity Index[6] and health service utilization costs for nonpsychiatric illness.

Clinical Points

- Treatment adherence to antidepressant pharmacotherapy can have a significant effect on health outcomes.
- Use of selegiline transdermal system was associated with a greater probability of receipt compared to selective serotonin reuptake inhibitors or serotonin norepinephrine reuptake inhibitors at 120 days and 180 days.
- Results suggest that after antidepressant treatment failure, earlier use of selegiline transdermal system may be warranted.

Table 1. Use Patterns for Antidepressant Pharmacotherapies

Use Pattern for Selegiline Transdermal System as Primary Antidepressant[a]	n (%)
Treatment success (≥ 90 d)	59 (83)
Treatment failure (< 90 d)	12 (17)
Treatment failure → change to SSRI or SNRI	6 (50)
Treatment failure → change to SSRI or SNRI → change within or between class (SSRI or SNRI)	5 (42)
Treatment failure → change to SSRI or SNRI → continue SSRI or SNRI or change within or between class (SSRI or SNRI) + atypical antipsychotic	1 (8.3)
Use Pattern for Antidepressant Pharmacotherapy Postinitiation of an SSRI or SNRI[b]	**n (%)**
Treatment success (≥ 90 d)	1,574 (54)
Treatment failure (< 90 d)	1,340 (46)
Treatment failure → change within or between class (SSRI or SNRI)	953 (71)
Treatment failure → selegiline transdermal system	85 (6.3)
Treatment failure → change within or between class (SSRI or SNRI) → selegiline transdermal system	259 (19)
Treatment failure → change within or between class (SSRI or SNRI) → continue SSRI or SNRI or change within or between class (SSRI or SNRI) + atypical antipsychotic → selegiline transdermal system	43 (3.2)

[a]N = 71.
[b]N = 2,914.
Abbreviations: SNRI = serotonin norepinephrine reuptake inhibitor, SSRI = selective serotonin reuptake inhibitor.

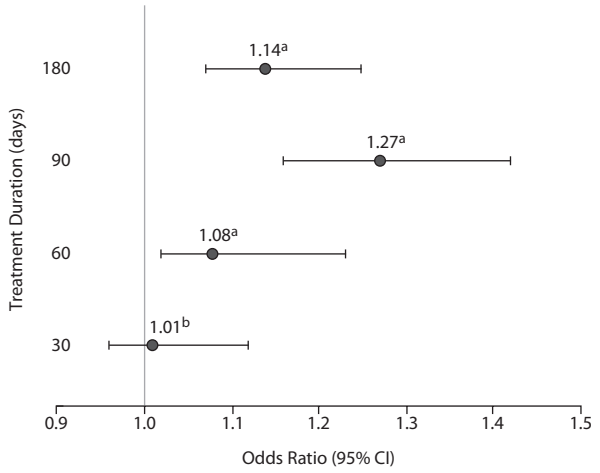
RESULTS

Of the patient records identified (N = 2,985), the majority of patients received selegiline transdermal system as a second or third treatment option following treatment failure (Table 1). Only 71 patients received selegiline transdermal system as first-line therapy. Patients were more likely to receive selegiline transdermal system for 60, 90, or 180 days compared to other therapies irrespective of treatment failure ($P < .05$; Figure 1). Among patients who did not fail treatment in the first 90 days, selegiline transdermal system was associated with a greater probability of receipt compared to SSRIs or SNRIs at 120 days (odds ratio [OR] = 1.21; 95% CI, 1.14–1.47) and 180 days (OR = 1.09; 95% CI, 1.01–1.28).

CONCLUSION

Treatment adherence to antidepressant pharmacotherapy can have a significant effect on health outcomes. Although limited by the small sample size of patients receiving selegiline transdermal system versus other pharmacotherapies, our results suggest that after antidepressant treatment failure, earlier use of selegiline transdermal system may be warranted.

Figure 1. Conditional Regression Analysis for Receipt of 30, 60, 90, and 180 Days of Selegiline Transdermal System Relative to an SSRI or SNRI Irrespective of Treatment Failure (N = 2,985)



[a]$P < .05$.
[b]P = not significant.
Abbreviations: SNRI = serotonin norepinephrine reuptake inhibitor, SSRI = selective serotonin reuptake inhibitor.

Drug names: selegiline transdermal system (EMSAM).
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