



Case Report

Treating Depression Comorbid With Parkinson's Disease by Duloxetine

Shao-Tsu Chen*, Shaw-Ji Chen

Department of Psychiatry, Buddhist Tzu Chi General Hospital and Tzu Chi University, Hualien, Taiwan

Article info

Article history:

Received: January 13, 2009

Revised: February 24, 2009

Accepted: March 23, 2009

Keywords:

Antidepressant

Depression

Duloxetine

Parkinson's disease

Side effects

Abstract

A 67-year-old Han Chinese man had been suffering from Parkinson's disease (PD) for 3 years. He received slow-release Madopar 250 mg and Madopar 375 mg per day for his PD. He suffered an L3 compression fracture in an accident and was hospitalized for surgery because of severe back pain. He was referred to a psychiatrist because of severe depression. Duloxetine (30 mg twice per day, without titration) was prescribed for both antidepressant and analgesic effects. This regimen was continued for 7 months with no deterioration in cognitive function, and no worsening of PD was observed in his monthly follow-up. Duloxetine, which is a serotonin and noradrenaline reuptake inhibitor, may have the same antidepressant effect as tricyclic antidepressants but has fewer side effects for PD patients. (*Tzu Chi Med J* 2010;22(1):68–69)

*Corresponding author. Department of Psychiatry, Buddhist Tzu Chi General Hospital, 707, Section 3, Chung-Yang Road, Hualien, Taiwan.
E-mail address: shaotsu.tw@yahoo.com.tw

1. Introduction

Approximately 30–40% of patients with Parkinson's disease (PD) suffer from depression but only 20–25% of those patients receive antidepressants. In addition to the emotional distress, the occurrence of depression in PD has been associated with a rapid decline in motor symptoms, cognitive decline, and the development of dementia, which reduces the quality of life. However, antiparkinsonian medications have only limited antidepressant efficacy (1).

In 2006, a subcommittee of the American Academy of Neurology suggested using amitriptyline to treat depression in PD (2). In clinical practice, however, tricyclic antidepressants are not very useful in PD because of their significant side effects (3).

Duloxetine (Lilly, Indianapolis, IN, USA) is a selective serotonin and norepinephrine reuptake inhibitor. It is

relatively balanced in its affinity for both serotonin and norepinephrine reuptake inhibition (4) and is used for treating major depression, especially in patients with pain and urinary incontinence (5).

We report the use of duloxetine, a dual-action antidepressant, to treat a major depressive episode in a patient with PD, without significant adverse effects.

2. Case report

A 67-year-old married Han Chinese male patient from Taiwan had been a victim of PD for 3 years. He also had a history of diabetes mellitus, hypertension, and benign prostate hypertrophy. He received Madopar HBS 250 mg (levodopa 200 mg, benserazide 50 mg, controlled-release) and Madopar 375 mg (levodopa 100 mg, benserazide 25 mg, immediate release) per

day for his PD. Although he had no psychiatric illness before PD, he suffered from chronic dysphoria after the onset of PD. He sustained an L3 compression fracture in an accident and was hospitalized for surgery because of severe back pain, for which he received nimesulide 100 mg twice per day. Psychiatric examination revealed that his depressive symptoms met the criteria of major depression according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. His Montgomery-Asberg Depression Rating Scale (MADRS) score was 30 and the Clinical Global Impression-Severity (CGI-S) scale score was 6. Duloxetine (30 mg twice per day, without titration) was prescribed for both its antidepressant and analgesic effects. After surgery, his back pain improved significantly. Two weeks after the initiation of duloxetine, his MADRS score was 18 and the CGI-S score had improved to 3. Duloxetine was continued because the patient and his family were satisfied with the marked mood improvement. Two months after the initiation of duloxetine, his MADRS score was 10 and the CGI-S score had improved to 2. This regimen continued for 7 months with no deterioration in cognitive function, and no worsening of PD was observed in his monthly follow-up. The dosage of Madopar HBS and Madopar remained the same over the entire 7 months.

3. Discussion

We successfully prescribed duloxetine for our patient to treat a major depressive episode in PD, without significant adverse effects. We did not follow the American Academy of Neurology advice to prescribe amitriptyline, because in previous tricyclic antidepressant and selective serotonin reuptake inhibitor randomized controlled trials, high dropout rates were related to significant side effects, including somatic complaints, confusion, and visual hallucinations (6). These symptoms did not occur in our case.

Discrepant severity scores as measured by the CGI and MADRS scales in the treatment period were noted. Severity scores evaluated by CGI were consistently higher than when evaluated by MADRS. This is unsurprising because the CGI score reflects discomfort induced by L3 compression fracture, PD and depression, while the MADRS does not clearly reflect somatic symptoms. Duloxetine has proven to be efficacious in treating depressed patients with pain symptoms (7). However, in our patient, we attributed the analgesic effect mainly to surgical treatment.

Current clinical evidence suggests that newer dual-action antidepressants (duloxetine, venlafaxine, milnacipran) may offer improved efficacy, faster onset of action compared with selective serotonin reuptake inhibitors, and an improved side effect profile than tricyclic antidepressants (8). In a matched group study,

depressed PD patients had higher rates of newer non-selective serotonin reuptake inhibitor use (20.6% vs. 19.2%, $p < 0.05$) and lower rates of tricyclic antidepressant use (7.4% vs. 8.9%, $p < 0.001$) than non-depressed PD patients (3).

In conclusion, duloxetine, which is a serotonin and noradrenaline reuptake inhibitor, may have the same antidepressant effect for PD patients as tricyclic antidepressants but with fewer side effects. It should be noted, however, that possible adverse effects of duloxetine include nausea, dry mouth, fatigue, and decreased appetite (9). On the other hand, tremors might be a symptom of deteriorating PD or excessive noradrenaline, and therefore, more evidence for differential diagnosis is required (10). These adverse events could be monitored by careful inquiry and physical examination.

References

- Gallagher DA, Schrag A. Impact of newer pharmacological treatments on quality of life in patients with Parkinson's disease. *CNS Drugs* 2008;22:563-86.
- Miyasaki JM, Shannon K, Voon V, et al. Practice Parameter: evaluation and treatment of depression, psychosis, and dementia in Parkinson disease (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 2006;66:996-1002.
- Chen P, Kales HC, Weintraub D, Blow FC, Jiang L, Mellow AM. Antidepressant treatment of veterans with Parkinson's disease and depression: analysis of a national sample. *J Geriatr Psychiatry Neurol* 2007;20:161-5.
- Djaldetti R, Yust-Katz S, Kolianov V, Melamed E, Dabby R. The effect of duloxetine on primary pain symptoms in Parkinson disease. *Clin Neuropharmacol* 2007;30:201-5.
- Menezes HS, Bueno BB, Ciulla L, et al. Antidepressant behavioral effects of duloxetine and amitriptyline in the rat forced swimming test. *Acta Cir Bras* 2008;23:447-50.
- Chung TH, Deane KH, Ghazi-Noori S, Rickards H, Clarke CE. Systematic review of antidepressant therapies in Parkinson's disease. *Parkinsonism Relat Disord* 2003;10:59-65.
- Lee P, Shu L, Xu X, et al. Once-daily duloxetine 60 mg in the treatment of major depressive disorder: multicenter, double-blind, randomized, paroxetine-controlled, non-inferiority trial in China, Korea, Taiwan and Brazil. *Psychiatry Clin Neurosci* 2007;61:295-307.
- Tran PV, Bymaster FP, McNamara RK, Potter WZ. Dual monoamine modulation for improved treatment of major depressive disorder. *J Clin Psychopharmacol* 2003;23:78-86.
- Brannan SK, Mallinckrodt CH, Brown EB, Wohlreich MM, Watkin JG, Schatzberg AF. Duloxetine 60 mg once-daily in the treatment of painful physical symptoms in patients with major depressive disorder. *J Psychiatr Res* 2005;39:43-53.
- Raethjen J, Lemke MR, Lindemann M, Wenzelburger R, Krack P, Deuschl G. Amitriptyline enhances the central component of physiological tremor. *J Neurol Neurosurg Psychiatry* 2001;70:78-82.