Nortriptyline and Atenolol for the Treatment of Bulimia in a Diabetic Woman

Michael M. Newman, M.D.
Ellen Schlefer, M.D.
Susan Abraham, M.D.

A case of bulimia in a young diabetic woman is presented. The patient was successfully treated with nortriptyline and atenolol.

Recent reports indicate that the prevalence of bulimia in young diabetic women may be between 6.5 and 35%, suggesting that diabetic women are at an increased risk to develop bulimia (Hudson, Wentworth, Hudson, & Pope, 1985).

The combination of these disorders may be especially problematic with poorly controlled blood glucose levels and episodes of diabetic ketoacidosis secondary to binge eating (Hillard & Hillard, 1984).

Although antidepressant medication has been successfully used for the treatment of bulimia (Pope, Hudson, Jonas, & Todd, 1983; Walsh, Stewart, Roose, Glodis, & Glassman, 1984; Hughes, Wells, Cunningham, & Ilstrup, 1986), this is the first case report which describes the use of antidepressant medication with atenolol in a young diabetic bulimic woman.

CASE REPORT

The patient is a 28-year-old woman, diagnosed as type I diabetic since age 5, who was hospitalized because of increasing depression associated with feelings of hopelessness and suicidal ideation. In addition, the patient reported an 8-year history of binge eating and purging associated with another unique

Michael M. Newman, M.D., is Instructor in Psychiatry, Cornell University Medical Center, and Staff Psychiatrist, Eating Disorder Unit, New York Hospital-Westchester Division. **Ellen Schlefer, M.D.,** and **Susan Abraham, M.D.,** are Residents in Psychiatry, New York Hospital-Westchester Division. *Address reprint requests to Dr. Newman at The New York Hospital—Cornell Medical Center, Westchester Division, 21 Bloomingdale Rd., White Plains, New York 10605*

International Journal of Eating Disorders, Vol. 7, No. 3, 429–432 (1988)

CCC 0276-3478/88/030429–04$04.00

weight control method which was inducing glycosuria by withholding insulin injections. The patient described having problems controlling her weight throughout adolescence, with a weight fluctuation between 110 and 130 lb (patient is 5'2" tall). During that period she recalls having an easier time maintaining or losing weight if she decreased her insulin dose. The patient reported that she began to binge eat as a sophomore in college, but at that time it was on an infrequent basis and largely in the presence of other students. Following graduation from college, the patient lived alone for the first time and began to binge eat daily upon returning from work. She reports she would eat for approximately 2 hours until feeling so physically distressed she would go to sleep. In addition, she would intentionally lower her insulin dose to avoid weight gain. Three years prior to admission the patient consulted a psychiatrist for depression associated with increased sleep, diurnal mood variation, and suicidal ideation and was prescribed nortriptyline. In addition, weekly psychotherapy was begun. The patient reports an excellent response to nortriptyline in that her depression was resolved and the frequency of her binge eating was significantly reduced. Unfortunately, the patient developed increased blood pressure and tachycardia secondary to nortriptyline and medication was discontinued. Within 2 months, the patient reports her binging resumed on a daily basis and since that time she has binged at least several times per week. It is noteworthy that the patient failed to disclose her history of bulimia to her treating endocrinologist, psychotherapist, and consulting psychiatrist.

During the year prior to her psychiatric hospitalization, the patient was hospitalized on four occasions for treatment of diabetic ketoacidosis. Three months prior to her admission, the patient sought psychiatric consultation and for the first time disclosed her history of bulimia. The patient was prescribed desipramine and over the course of 2–3 weeks reported that she was no longer binging and that her mood was significantly better. Unfortunately, on a dose of desipramine 100 mg p.o., g.d., the patient developed tachycardia (PR 112–120) and angina, forcing medication to be discontinued. A decision was made to initiate a trial of phenelzine following a 2-week drug washout. During that 2-week period, the patient became significantly more depressed and resumed binging several times a day. A trial of phenelzine 15 mg p.o., b.i.d., was initiated but had to be discontinued after 5 days because of increasing bilateral lower extremity edema. A trial of trazodone was initiated, but the patient required hospitalization because of her depression associated with increasing suicidal ideation, increased frequency of binging, poor compliance with insulin regimen, and poorly controlled blood sugars.

At time of admission, the patient was diagnosed as having bulimia, major depressive disorder, and type I diabetes, complicated by evidence of diabetic nephropathy, peripheral neuropathy, retinopathy, hypothyroidism, hypertension, and microvascular disease of the heart as documented on thallium scan. Her medication at time of admission included insulin administered by a pump mechanism, lasix 80 mg, p.o., b.i.d., aldactone 25 mg p.o., t.i.d., synthroid 0.10 mg, p.o., q.d., and hydralazine 25 mg, p.o., t.i.d. The plan on admission was to continue trazodone until an adequate trial had been completed for treatment of bulimia and depression. During the first 4 weeks of her hospital stay, trazodone was increased to 525 mg a day, but the patient continued to be severely depressed. In addition, she continued to manipulate her insulin, re-

sulting in tremendous fluctuation of blood glucoses and ketonuria. After the first month of hospitalization, it was decided the patient was not responding to trazodone, which was discontinued. She continued to be in a high risk for suicide. ECT was considered but ruled out because of increased risk of retinal hemorrhages. Since the patients had previously responded to tricyclic antidepressants, a trial of nortriptyline was initiated, but atenolol, a selective beta blocker, was added to the regimen because of the patient's previous history of tachycardia and angina. Nortriptyline was gradually increased to 125 mg per day and given with atenolol 25 mg, p.o., q.d. Over the following 2–3 weeks, the patient was again able to report the resolution of her depression and suicidal ideation. She also reported that she no longer felt like binge eating. Her blood glucose was well controlled. Furthermore, the patient suffered no episodes of tachycardia or angina and tolerated well the combination of nortriptyline and atenolol. Admission medications were continued with the exception of hydralazine, which was no longer necessary for adequate blood pressure control. The patient was discharged and at 3 months follow-up continued to do well. She reported that her bulimia continued to be in remission and that her blood glucose levels were well controlled in a range between 70 and 180 mg/dl.

COMMENT

This patient's case demonstrates not only the successful treatment of bulimia with a tricyclic antidepressant in a young diabetic woman but also the particular risks associated with the combination of these two disorders.

Typical of many eating-disorder patients, this patient kept her binge behavior secret for many years. The consequences, however, were far greater since her binging and purging along with her manipulating insulin doses resulted in poorly controlled blood glucose levels and undoubtedly contributed to her multiple hospitalizations for diabetic ketoacidosis and multiple organ disease.

Antidepressant medications have been demonstrated to be an effective treatment of bulimia, but their use in diabetic patients pose several problems. Tachycardia and blood pressure changes induced by tricyclic medication may be more problematic in the diabetic because of microvascular and autonomic dysfunction. The cardiovascular side effects can be controlled by beta blockers, but the presence of diabetes has been a relative contraindication in the use of these agents. Beta blockers have been reported to mask the signs of hypoglycemia and therefore have been avoided in diabetic patients.

In a review of the literature, however, Ostman (1983) concluded that adverse metabolic effects, prolonged hypoglycemia, and adverse hypodynamic effects associated with the use of beta blockers in diabetic patients is actually quite low and even less likely to occur if cardioselective agents (beta-one blocker such as atenolol) are employed.

On two separate occasions, this patient's bulimia responded to tricyclic medication, but treatment had to be discontinued because of adverse cardiovascular effects. The combination of nortriptyline with atenolol effectively produced the antidepressant and antibinge result without tachycardia and angina.

REFERENCES

Hillard, J. R., Lobo, M. C., & Keeling, R. P. (1983). Bulimia and diabetes: A potentially life-threatening combination. *Psychosomatics, 24,* 292–295.

Hillard, J. R., & Hillard, P. J. A. (1984). Bulimia, anorexia nervosa, and diabetes. *Psychiatric Clinics of North America, 7,* 367–379.

Hudson, J. I., Wentworth, S. M., Hudson, M. S., & Pope, H. G. (1985). Prevalence of anorexia nervosa and bulimia among young diabetic women. *Journal of Clinical Psychiatry, 46,* 88–89.

Hughes, P. L., Wells, L. A., Cunningham, C. J., & Ilstrup, D. M. (1986). Treating bulimia with desipramine: A double-blind, placebo controlled study. *Archives of General Psychiatry, 43,* 182–186.

Ostman, J. (1983). B-adrenergic blockade and diabetes mellitus. A review. *Acta Med Scand Supplement, 672,* 69–77.

Pope, H. G., Hudson, J. I., Jonas, M. D., & Todd, M. S. (1983). Bulimia treated with imipramine: A placebo controlled double-blind study. *American Journal of Psychiatry, 140,* 554–558.

Rodin, G. M., Daneman, D., Johnson, L. E., Kenshole, A., & Garfinkel, P. (1985). Anorexia nervosa and bulimia in female adolescents with insulin dependent diabetes mellitus: A systematic study. *Journal of Psychiatric Research, 19,* 381–384.

Rosmark, B., Christian, B., Homgren, S., Lago, C., Gunilla, R., & Sohlberg, S. (1986). Eating disorders in patients with insulin-dependent diabetes mellitus. *Journal of Clinical Psychiatry, 47,* 547–550.

Walsh, B. T., Stewart, J. W., Roose, S. P., Glodis, M., & Glassman, A. H. (1984). Treatment of bulimia with phenelzine. *Archives of General Psychiatry, 41,* 1105–1109.