

Methylphenidate Treatment for Bulimia Nervosa Associated with a Cluster B Personality Disorder

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Abstract: Objectives: *Psychotherapy and antidepressant medication are helpful to many patients with bulimia nervosa (BN). However, a substantial number of bulimics respond poorly to such treatments. Recent studies suggest that many of the poor responders have cluster B personality disorders. In some ways, the symptomatology of bulimics who have a comorbid cluster B disorder resembles that of patients with attention deficit hyperactivity disorder (ADHD). In particular, individuals in both groups frequently have a high level of impulsivity. Such a resemblance raised the question of whether administration of methylphenidate (MPH), a drug used to treat ADHD, would have therapeutic effects in this subgroup of BN patients. Method:* In a pilot study, we administered MPH to 2 patients with BN and cluster B traits and found beneficial effects. These patients had not responded to adequate trials of psychotherapy and selective serotonin reuptake inhibitors (SSRIs). **Results:** MPH treatment was effective. Both Patients had decreased bingeing and purging. **Discussion:** MPH may be useful for bulimics with cluster B personality disorder who respond poorly to conventional treatment. Further studies of MPH administration may be worthwhile. Due to the potential risks, however, clinical treatment with this agent is not recommended at this time. © 1999 by John Wiley & Sons, Inc. *Int J Eat Disord* 25: 233–237, 1999.

Key words: *bulimia nervosa; methylphenidate; psychostimulants; cluster B personality disorder*

INTRODUCTION

Bulimia nervosa (BN) is a disorder that occurs predominantly in women of normal weight and usually has its onset in adolescence. It may occur in as many as 4% of women (Fairburn & Beglin, 1990). The distinguishing feature of BN is binge episodes, followed by compensatory purging behavior. In addition, women with BN have a complex of symp-

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toms that includes an abnormal body image, negative mood states, obsessionality, and altered impulse control.

Two major treatment categories have been shown to be efficacious in some bulimics. Structured psychotherapies, such as cognitive behavioral therapy (CBT) and interpersonal therapies, have significant effects in some BN patients. In addition, at least a dozen double-blind, placebo-controlled trials of various antidepressants show that almost all of these agents produce symptom abstinence or decreased bingeing and purging in some, but not all, people with BN (for review, see Halmi, Agras, Kaye, & Walsh, 1994).

Despite these treatment advances, many BN patients respond poorly to psychotherapy, alone or in combination with antidepressant medications. One factor that predicts poor response to treatment is the presence of a comorbid cluster B personality disorder. Approximately 25–50% of bulimics have at least one comorbid cluster B personality disorder: antisocial, borderline, histrionic, and narcissistic personality disorders (Rossiter, Agras, Telch, & Schneider, 1993). In addition, impulsivity (a cluster B personality trait) is a strong predictor of poor long-term outcome in BN patients (Keel & Mitchell, 1997). This suggests that further investigation of alternative treatments is warranted, especially in bulimics with cluster B traits, to determine if treatment effectiveness can be improved.

While considering alternative pharmacological agents for treatment-resistant BN patients, especially those with cluster B traits, we questioned whether impulsivity, affective instability, and inattention might respond to administration of a psychostimulant medication. Similar features, including overactivity, are the hallmark of attention deficit hyperactivity disorder (ADHD) and respond to psychostimulants.

We are not aware of any studies that have determined whether ADHD occurs during the childhood of people who develop BN. There is some suggestion of comorbidity of ADHD and cluster B personality disorders. For example, there is comorbidity of ADHD and borderline personality disorder in children and adolescents (Biederman, Newcorn, & Sprich, 1991) and in adults (Tzelepis, Schubiner, & Warbasse, 1995). In studies of childhood ADHD that persists in adults, the adults have a high frequency of impulsivity, affective lability, and antisocial traits (Wender, Reimherr, & Wood, 1981). Moreover, a higher incidence of antisocial disorders is found in children with ADHD (Satterfield, Swanson, Schell, & Lee, 1994) and childhood ADHD predicts antisocial personality disorder in adulthood (Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993).

Methylphenidate (MPH) is a psychostimulant which has been demonstrated to be superior to placebo in the treatment of ADHD in children (Greenhill, 1992) and adults (Spencer et al., 1995; Wender et al., 1981). There are few reports of psychostimulants administered to patients with BN. Schweickert, Strober, and Moskowitz (1997) describe a significant decrease in binge eating in a 25-year-old woman with BN and comorbid ADHD who was treated with MPH, up to 5 mg three times per day. Messner (1989) administered 5 mg of MPH, one to three times per day to a 27-year-old woman who had suffered from BN for at least 9 years. During the 20 weeks of treatment with MPH, she reported absence of temptation to binge or induce vomiting, and a calm emotional state, with no adverse effects. In a double-blind, placebo-controlled study of 8 patients, with a mean age of 24 ± 5 years, Ong, Checkley, and Russell (1983) found a statistically significant decrease in the bulimic symptoms of bingeing and purging with another psychostimulant, methyl-amphetamine.

We report two case studies in which we gave MPH to patients with BN and cluster B personality disorders. Both subjects had not responded to adequate trials of psychotherapy and selective serotonin reuptake inhibitors (SSRIs).

CASE 1

This 20-year-old woman had a 5-year history of BN and cluster B personality disorders (borderline and histrionic). She described symptoms of ADHD since age 7. For the past 5 years, she binged at least two times per day and purged approximately five to six times per day. Adequate trials of fluoxetine and paroxetine, combined with psychotherapy, had not been helpful in the past.

In a single-blind trial of MPH, 5 mg was given in the morning the first 2 days, 10 mg per day (5 mg in the morning and 5 mg at noon) the third day, and 20 mg per day (10 mg at 8 a.m., 5 mg at noon, and 5 mg at 5 p.m.) subsequently. The patient had a substantial decrease in the urge to binge and purge, as well as decreased ADHD symptoms on a modified Conners ADHD symptom scale (Conners, 1969). That is, she had decreased impulsivity, restlessness, failure to finish tasks, fidgetiness, distractibility, demanding of others, frustration, and rapid mood changes.

The patient's total Conners scores (Conners, 1969) on a scale ranging from 0 to 36 were 7 to 22 the week prior to MPH treatment and 1 to 7 on MPH. Her average total Conners score was 12.6 ($SD = 5.97$) the week prior to MPH, 3 ($SD = 2.53$) the first 6 days of MPH treatment, 3 on MPH 5 mg/day, 4 on 10 mg/day, and 2.6 the first 3 days she received 20 mg/day.

The patient's Eating Attitude Test (EAT; Garner & Garfinkel, 1979) score ranged from 19 to 47 the week prior to MPH, with an average of 28.9. The first 6 days she received MPH, her EAT scores ranged from 12 to 20, with an average of 16.3. A score of 20 or more indicates disordered eating attitudes.

Since hospital discharge, the patient remained on the same dosage regimen in an open trial. Her dose is equivalent to 1.65 mg/kg at 8 a.m. and 0.82 mg/kg at noon and 5 p.m. Her urges to binge and induce vomiting have significantly decreased during the 10 months since discharge. She has had only one episode of bingeing and two episodes of purging, and these occurred on days when she chose not to take her medication (and at times of stressful life events). She has less impulsivity, an increase in attention span, and a decrease in distractibility. Furthermore, her academic and work performance, as well as her interpersonal relationships and general psychosocial functioning, have improved significantly. There was no rebound effect.

CASE 2

This 38-year-old woman had a 20-year history of BN, borderline personality disorder, generalized anxiety disorder, and major depressive disorder. She relates a lifelong history of impulsivity, difficulty concentrating, labile mood, and overactivity. She has had several years of psychotherapy and various antidepressants (e.g., fluoxetine, venlafaxine). Psychotherapy and SSRIs contributed somewhat to improved social functioning and reduced anxiety and depression but had little effect on her binge and purge frequency or ADHD-like symptoms. She was treated with MPH (2.5 mg/kg), 5 mg three times per day, for 1 month. She reported decreased bingeing and purging (from 20 times per week to 3 times per week), as well as decreased impulsivity, improved concentration, greater ability to plan and complete tasks, and less reactivity to stress. This patient's total Conners score was 34 before MPH and 13 on MPH.

She describes MPH as less satisfactory than SSRIs in antidepressant and antianxiety

effects. She has continued on psychostimulants and fluoxetine for the past year. A trial of pemoline was given because of rebound effect from MPH, consisting of return to baseline BN symptoms and irritability in the evenings. However, in the past 4 months long-acting MPH has reduced symptoms more and minimized rebound effects.

DISCUSSION

These two cases raise the question of the use of psychostimulants in BN patients who do not respond to conventional therapies. Both patients responded to MPH, reporting significant reduction in binge and purge frequency and ADHD-like symptoms, as shown by the decrease in Conners scores. We have followed both patients as outpatients for 10 and 12 months, respectively. Both women continue to do well, report no side effects, and deny any euphoriant or rebound effects.

There is a risk that stimulant medication in this population may lead to abuse. However, numerous studies of MPH administration in the treatment of ADHD show no increased incidence in the following problems: recreational drug use, excessive use of medicinal drugs, psychological dependence, and addiction to stimulants (for review see Dulcan, 1990). Also, although MPH is abused it is abused much less than cocaine and other amphetamines (Volkow et al., 1995). Pharmacokinetic differences may account for MPH's decreased reinforcing and addictive properties. Its abuse potential is, however, of concern because of increased substance abuse in bulimics, especially those with cluster B personality disorders (Lilenfeld et al., 1997).

The reason for the possible efficacy of MPH in BN with cluster B disorder is not known. Our subjects reported decreased impulsivity and affective instability and improved concentration. These clinical features are also associated with ADHD and may decrease in response to psychostimulant treatment (Greenhill, 1992). Whether childhood or adult ADHD is a common finding in people with BN and cluster B personality disorders is not known.

There are several important differences between BN and ADHD. First, BN is a disorder of adolescents and adults, whereas ADHD has its onset in childhood. Second, 80% or more of patients with ADHD are male, while only 10% of BN patients are male (American Psychiatric Association, 1994). Perhaps gender dictates how a biologic vulnerability gets expressed. That is, if these two disorders have a similar biologic diathesis, culture or gonadal steroid influences may dictate that males and females each present with different symptoms at different times in the life cycle.

In order to address the issue of whether ADHD occurs in BN, we conducted a pilot study assessing ADHD symptoms in childhood and in the past year using a self-report modified Conners scale (total score range = 0–36). We assessed 6 female BN patients with cluster B personality disorders (mean age = 30.8 years) and 7 normal control women (mean age = 28.9 years). The control group was composed of medical student volunteers. These two groups had similar ages and body mass indices. In terms of current symptoms on the Conners scale, the BN with cluster B disorder group had mean total scores of 25.3 ± 4.0 , while the controls had mean total scores of 16.8 ± 2.4 . These scores are significantly different ($p = .002$ by t test). For ADHD symptoms in childhood, the patients had a mean score of 23.5 ± 8.6 , while the controls' mean was 15.8 ± 3.0 (trend toward significance, $p = .085$ by t test).

In conclusion, several lines of evidence raise the possibility that treatment with psy-

chostimulants may be useful in the treatment of bulimics with a cluster B personality disorder who respond poorly to more conventional treatments. Data from these case reports suggest that further studies of MPH administration are worthwhile. At this time, however, given the potential risks, treatment with this agent is not recommended.

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC.
- Biederman, J., Newcorn, J., & Sprich, S. (1991). Comorbidity of attention deficit hyperactivity disorder with conduct, depressive, anxiety, and other disorders. *American Journal of Psychiatry*, *148*, 564–577.
- Conners, C.K. (1969). A teacher rating scale for use in drug studies with children. *American Journal of Psychiatry*, *126*, 152–156.
- Dulcan, M.K. (1990). Using psychostimulants to treat behavioral disorders of children and adolescents. *Journal of Child and Adolescent Psychopharmacology*, *1*, 7–20.
- Fairburn, C.G., & Beglin, S.J. (1990). Studies of the epidemiology of bulimia nervosa. *American Journal of Psychiatry*, *147*, 401–408.
- Garner, D.M., & Garfinkel, P.K. (1979). The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, *9*, 273–279.
- Greenhill, L.L. (1992). Pharmacotherapy: Stimulants. *Child and Adolescent Psychiatric Clinics of North America*, *1*, 411–447.
- Halmi, K.A., Agras, W.S., Kaye, W.H., & Walsh, B.T. (1994). Evaluation of pharmacological treatments in eating disorders. In R.F. Prien & D.S. Robinson (Eds.), *Clinical evaluation of psychotropic drugs: Principles and guidelines* (pp. 547–577). New York: Raven Press.
- Keel, P.K., & Mitchell, J.E. (1997). Outcome in bulimia nervosa. *American Journal of Psychiatry*, *154*, 313–321.
- Lilenfeld, L.R., Kaye, W.H., Greeno, C.G., Merikangas, K.R., Plotnikov, K.H., Pollice, C., Rao, R., Strober, M., Bulik, C.M., & Nagy, L. (1997). Psychiatric disorders in women with BN and their first-degree relatives: Effects of comorbid substance dependence. *International Journal of Eating Disorders*, *22*, 253–264.
- Mannuzza, S., Klein, R.G., Bessler, A., Malloy, P., & LaPadula, M. (1993). Adult outcome of hyperactive boys: Educational achievement, occupational rank, and psychiatric status. *Archives of General Psychiatry*, *50*, 565–576.
- Messner, E. (1989). Methylphenidate treatment of bulimia nervosa after surgery. *Canadian Journal of Psychiatry*, *34*, 824–826.
- Ong, Y.L., Checkley, A., & Russell, G.F.M. (1983). Suppression of bulimic symptoms with methylamphetamine. *British Journal of Psychiatry*, *143*, 288–293.
- Rossiter, E.M., Agras, W.S., Telch, C.F., & Schneider, J.A. (1993). Cluster B personality disorder characteristics predict outcome in the treatment of bulimia nervosa. *International Journal of Eating Disorders*, *13*, 349–357.
- Satterfield, J., Swanson, J., Schell, A., & Lee, F. (1994). Prediction of antisocial behavior in attention-deficit hyperactivity disorder boys from aggression/defiance scores. *Journal of the American Academy of Child and Adolescent Psychiatry*, *33*, 185–190.
- Schweickert, L.A., Strober, M., & Moskowitz, A. (1997). Efficacy of methylphenidate in bulimia nervosa comorbid with attention-deficit hyperactivity disorder: A case report. *International Journal of Eating Disorders*, *21*, 299–301.
- Spencer, T., Wilens, T., Biederman, J., Faraone, S.V., Ablon, S., & Lapey, K. (1995). A double-blind, crossover comparison of methylphenidate and placebo in adults with childhood-onset attention-deficit hyperactivity disorder. *Archives of General Psychiatry*, *52*, 434–443.
- Tzelepis, A., Schubiner, H., & Warbasse, L.H. (1995). Differential diagnosis and psychiatric comorbidity patterns in adult attention deficit disorder. In K.G. Nadeau (Ed.), *A comprehensive guide to attention deficit disorder in adults: Research, diagnosis and treatment* (pp. 35–57). New York: Brunner-Mazel.
- Volkow, N.D., Ding, Y.S., Fowler, J.S., Wang, G.J., Logan, J., Gatley, J.S., Dewey, S., Ashby, C., Lieberman, J., Hitzemann, R., & Wolf, A.P. (1995). Is MPH like cocaine? Studies on their pharmacokinetics and distribution in the human brain. *Archives of General Psychiatry*, *52*, 456–463.
- Wender, P.H., Reimherr, F.W., & Wood, D.R. (1981). Attention deficit disorder (“minimal brain dysfunction”) in adults: A replication study of diagnosis and drug treatment. *Archives of General Psychiatry*, *38*, 449–456.