

## Anorexia nervosa patients with a prior history of bulimia nervosa

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### Abstract

**Objectives:** To investigate clinical and psychological features of patients with anorexia nervosa (AN) with a previous history of bulimia nervosa.

**Method:** Three hundred thirty-three patients with a full diagnosis of AN were assessed by the Structured Clinical Interview for the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, the Eating Disorders Inventory, and the Hopkins Symptom Checklist.

**Results:** Twenty-four patients (7%) reported a previous diagnosis of bulimia nervosa and were compared with a control group of 48 patients without a history of bulimia, matched for diagnostic subtype. Among the patients with a history of bulimia nervosa, 11 were of the restricting type and 13 of the binge eating/purging type. Among restricting anorexic patients, those with a history of bulimia reported greater age of onset, more psychiatric symptoms, more family psychiatric morbidity, and a higher rate of sexual abuse. On the contrary, among patients with the AN bingeing-purging subtype, the presence of a previous bulimia nervosa was not associated with any of the investigated variables.

**Conclusions:** Patients with restricting AN who report a history of previous bulimia nervosa are not frequent among those referring to an outpatient eating disorders unit. However, our findings in this small group of subjects confirm that a lifetime history of bingeing and purging in patients with eating disorder, irrespective of when it occurs, is always associated with more psychopathology compared with those restricting patients with AN who have never had a period of bingeing and purging.

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### 1. Introduction

A large proportion of patients with eating disorder tend not to adhere to their *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* diagnosis over time but migrate between the diagnostic categories [1,2].

One of the most common shifts from one diagnosis to another is from anorexia nervosa (AN) to bulimia nervosa (BN) [1,3]. It has been estimated that about 30% of patients with restricting AN develop BN [4,5]. In an epidemiological study performed on a general female population sample, about 33% of BN cases reported an episode of AN or subthreshold AN preceding the development of BN [2]. BN patients with a history of AN seem more often to have a lifetime comorbidity with anxiety disorders [3,6], to weigh less [3,7], to vomit more frequently, and to report an earlier age of onset of their bulimic symptoms [8].

Kassett et al [9] observed that the reverse shift is also possible. However, the development of AN among subjects who suffer from BN seems uncommon [10]. That is probably why this peculiar evolution between diagnostic categories has received little attention in the literature.

The main aim of the present study is to investigate the prevalence and clinical features of AN patients with a history of bulimia.

### 2. Methods

#### 2.1. Sample

We examined the records of all patients with a full diagnosis of AN, according to *DSM-IV* (APA, 1994), who consecutively referred to our eating disorders outpatient unit from July 1992 to December 1999. Criteria of exclusion were the lifetime presence of a diagnosis of a schizophrenia-spectrum disorder, of a substance/alcohol dependence disorder, and of an endocrinological illness (such as diabetes or hyperthyroidism). All the criteria of inclusion were

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Table 1  
Characteristics of AN subjects with previous BN: comparison of diagnostic subgroups

	Restricting AN (n = 11)	Binge eating/purging AN (n = 13)	<i>t</i> (21)	<i>P</i>
	Mean (SD)	Mean (SD)		
Age at presentation	24.0 (4.5)	24.8 (5.3)	0.38	ns
BMI at presentation	16.1 (1.0)	16.0 (1.2)	0.03	ns
Age at first dieting	14.7 (2.1)	18.3 (5.4)	1.59	ns
BMI at first dieting	21.4 (1.7)	20.6 (2.0)	0.83	ns
Age at first bingeing	16.2 (2.3)	18.8 (5.0)	1.63	ns
BMI at first bingeing	19.0 (2.6)	20.3 (1.8)	1.49	ns
Loss of BMI from first dieting to first bingeing	2.58 (1.4)	0.07 (1.1)	4.23	<.001
Duration of BN (mo)	58.0 (46.1)	35.4 (33.7)	1.39	ns
Duration of AN (mo)	40.5 (46.5)	44.4 (34.9)	0.23	ns
Dieting before the onset of binge eating	6 (55%)	12 (92%)	$\chi^2 = 2.74$	ns
Purging type BN	6 (55%)	11 (85%)	$\chi^2 = 1.36$	ns

ns indicates not significant.

fulfilled by 333 AN patients (221 restricting type and 112 binge eating/purging type). Among these subjects, we checked the presence of a diagnosis of lifetime BN (according to the *DSM-IV* criteria), excluding those who presented amenorrhea and/or a body mass index (BMI) lower than 17.5 at the time of BN. AN subjects with a previous episode of BN were then compared with a control group selected among the whole sample of 333 patients, choosing the 2 AN patients without previous bulimia, matched for diagnostic type, who referred to our eating disorders unit just before and just after the index cases.

## 2.2. Measures

All the subjects who presented from 1992 to 1994 were assessed by the Eating Disorders section of the *Structured Clinical Interview for DSM-III-R* [11]. For the purpose of the present study, *DSM-III-R* diagnoses were later converted into the *DSM-IV* diagnosis. Starting from 1994, the Eating Disorders section of the *Structured Clinical Interview for DSM-IV* [12] was used. All subjects also underwent a semistructured interview to gather anamnestic, clinical, and psychopathological data, and completed some questionnaires including the Eating Disorders Inventory [13] and the Hopkins Symptom Check-List 90 [14]. All subjects were weighed and measured in height, and the BMI was calculated. After at least 3 sessions of assessment and

motivation to therapy, each patient began outpatient nutritional rehabilitation and cognitive-behavioral therapy.

The clinical variables considered in our study were the following: age and BMI at presentation, age and BMI at the time of the first diet, age and BMI at the first binge episode, duration of BN (in months), duration of AN (in months), history of sexual abuse, presence of alcohol/substances abuse, history of suicide attempts, family psychiatric morbidity, and BMI after 3 months of treatment.

## 2.3. Statistical analysis

SPSS software (SPSS Inc, Chicago, Ill) was used.  $\chi^2$  (with Yates' continuity correction for  $2 \times 2$  tables) and *t* test were used to compare groups. Given the explorative nature of the study, we did not use any correction of *P* values for multiple comparisons.

## 3. Results

Of the 333 AN patients who fulfilled the criteria of inclusion, 24 (7%) reported a history of BN according to the *DSM-IV* criteria. Of the 24 AN patients with previous BN, 11 (5% of restricting AN patients) were AN cases of the restricting type, whereas 13 belonged to the binge eating/purging type (12% of binge eating/purging type AN patients). In most cases, the episode of BN was of the purging type (71%). To assess the presence of trends in the

Table 2  
Clinical and psychopathological characteristics of restricting AN patients with previous BN and those without previous BN

	Restricting AN with previous BN (n = 11)	Restricting AN without previous BN (n = 22)	<i>t</i> (31)	<i>P</i>
	Mean (SD)	Mean (SD)		
Age at presentation	24.0 (4.5)	22.0 (4.0)	1.31	ns
Age of onset	21.7 (3.9)	18.9 (3.8)	2.03	<.05
BMI at presentation	16.1 (1.0)	14.8 (2.1)	1.90	ns
BMI after 3 mo of treatment	17.3 (1.3)	15.9 (1.1)	3.27	<.005
Eating Disorders Inventory bulimia	5.5 (4.3)	2.2 (3.1)	2.46	<.02
SCL global score	1.8 (0.8)	1.1 (0.6)	2.75	<.01
SCL obsession-compulsion	2.2 (0.8)	1.1 (0.7)	3.90	<.001
SCL depression	2.2 (1.0)	1.4 (0.9)	2.27	<.03
SCL anxiety	2.0 (0.9)	1.3 (0.8)	2.38	<.02
Maternal psychiatric history	6 (55%)	3 (14%)	$\chi^2 = 4.30$	<.04
Paternal psychiatric history	2 (18%)	3 (14%)	$\chi^2 = 0.23$	ns
Sexual abuse	4 (36%)	0 (0%)	$\chi^2 = 6.01$	<.01
Attempted suicide	1 (9%)	0 (0%)	–	–
Suicidal ideation	8 (73%)	8 (36%)	$\chi^2 = 2.56$	ns

pattern of presentation, we divided the cohort of patient referrals into 4 periods. Across the 4 periods of observation, there was a progressive increase in the proportion of AN patients with a history of BN, starting from 3% in the period July 1992–December 1993, 5% in the period January 1994–December 1995, 7% in the period January 1996–December 1997, and 11% in the period January 1998–December 1999.

Table 1 shows the clinical characteristics of AN subjects with previous BN. No differences emerged between AN of the restricting type and those of the binge eating/purging type, except for the amount of weight loss because of dieting before the onset of BN (Table 1).

In the comparison between AN patients with previous BN and those without a previous episode of BN (control group), several significant differences emerged in the restricting type group (Table 2), whereas no difference was found in patients with the binge eating/purging type AN (including BMI at presentation,  $16.0 \pm 1.2$  vs  $16.1 \pm 2.1$ ;  $t = 0.21$ ; not significant), with the exception of BMI after 3 months of treatment that was significantly higher in the group with previous BN ( $17.5 \pm 0.9$  vs  $16.2 \pm 1.5$ ;  $t = 2.58$ ;  $P < .02$ ). None of the subjects of the study developed binge eating during outpatient treatment.

#### 4. Discussion

Our study describes a small group of patients who displayed an unusual pathway to AN. Before our study, only the clinical report of Kasset et al [9] observed and briefly described a group of 7 patients who developed AN after an episode of BN. However, as reported by Keel and Mitchell [10], follow-up studies for BN subjects that included information regarding diagnostic crossover reported rates of shift from BN to AN that ranged from 0% to 7%. As shown in our data, it is possible to identify the presence of episodes of BN that are clearly distinguishable from binge eating/purging type AN because we excluded all patients with low weight and/or amenorrhea at the time of the presence of binge eating. Furthermore, in our cases, binge eating was not a transitory symptom because the mean duration of BN was more than 4 years (range, 3–156 months).

The main findings of our study are (1) the lack of differences between diagnostic subtypes in AN subjects with a previous episode of BN and (2) the presence of several clinical and psychopathological differences between restricting AN subjects with previous BN and those without. To sum it up, subjects with restricting AN who have fulfilled a lifetime diagnosis of BN tend to bear a greater resemblance to binge eating/purging type AN than to restricting AN as regards the variables considered by the present study. Subjects with binge eating/purging type AN and those with restricting AN with previous BN appear to share many factors, such as the coexistence of compulsive and impulsive features, higher scores on the Hopkins Symptom Checklist, the presence of a more frequent family

psychiatric history, and a higher age of onset of AN. In both diagnostic subtypes, the presence of a previous episode of BN is associated with a significantly higher BMI after 3 months of outpatient treatment. AN subjects with previous BN seemed to gain weight more easily than subjects without, and this characteristic appears to be independent of the tendency to binge eat because none of the subjects of our study developed binge eating during the first 3 months of treatment. This finding must be considered with caution because of the small sample size of the present study. However, it is possible that the subgroups of our study differ as regards some of the factors involved in the regulation of body weight and composition.

Describing this small and relatively uncommon group of subjects could be important to gain further knowledge about the definition of the phenotype of eating disorders. AN subjects tend to develop BN in 30%–50% of cases [1,4] and, as described in the present study, to have a history of prior BN in 7% of cases. On the contrary, BN subjects seem to develop AN in 0%–7% of cases [10] and to have a history of AN in 10%–40% of cases [1,3]. Looking at these figures, it seems that the most common phenotype among eating disorders is the female subject who experiences both symptoms of AN and those of BN at the same time or at different times in her life. For this reason, it might be important to consider the tendency to shift from one eating disorder diagnosis to another as one of the relevant characteristics to be investigated in etiological studies [1,15]. This would be similar to what is usually done for the phenotypic definition of bipolar and unipolar affective disorders. Many etiological studies of eating disorders, on the contrary, have excluded this group of subjects from their data sets [16,17]. Although it is important to use a uniform definition of the eating disorder phenotype and to exclude the effects of behavioral covariates, to find susceptibility genes, diagnostic instability might be considered an essential component of the phenotype of eating disorders, whose genetic and environmental risk factors should be investigated in future studies.

Clearly, further studies are needed to clarify the role of previous BN in AN patients, our findings suggest that this type of evolution must be considered more carefully by therapists during the assessment and treatment of AN patients, and particularly in the restricting subtype. Our findings further support the importance of considering the longitudinal changes of eating psychopathology as part of the phenotype of eating disorders.

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