

## Frequency of Isolated Panic Attacks and Panic Disorder in Patients with the Mitral Valve Prolapse Syndrome

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**P**anic disorder is a specific form of anxiety disorder that shares several clinical features with the mitral valve prolapse (MVP) syndrome.<sup>1,2</sup> Studies attempting to define the relation between these disorders have produced conflicting results.<sup>3-5</sup> This study prospectively assesses the frequency of isolated panic attacks and panic disorder in patients with the MVP syndrome.

*Consecutive outpatient subjects with chest pain, palpitations, presyncope or syncope, or effort intolerance/dyspnea were considered eligible for the study. Patients with underlying organic heart disease (other than MVP) based on medical history, physical examination, chest x-*

*ray, resting and 24-hour ambulatory (for those with palpitations, or presyncope or syncope) electrocardiograms, echocardiogram (M-mode, 2-dimensional, Doppler and color flow) and treadmill exercise testing with thallium 201 scintigraphy (in those with chest pain) were excluded from the study. Patients previously diagnosed with MVP, and those who previously received a discrete psychiatric diagnosis by a psychiatrist or psychologist were also excluded.*

*The interviewing physician needed to commit in writing as to the presence or absence of isolated panic attacks or panic disorder before performing the physical examination or obtaining/reviewing laboratory tests. Echocardiography was performed in accordance with American Society of Echocardiography guidelines using a Hewlett-Packard Sonos 1000 ultrasonograph and 2.25 MHz transducer. MVP was diagnosed in accordance with the criteria of Perloff et al.<sup>1</sup> The MVP syndrome was de-*

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**TABLE I** Criteria for Panic Attacks and Panic Disorder

Panic attacks
Discrete periods of intense fear or discomfort associated with $\geq 4$ of following:
Shortness of breath or smothering sensations
Palpitations; acceleration of heart rate
Chest pain or discomfort
Sweating
Faintness, dizziness, lightheadedness or unsteady feelings
Nausea or abdominal distress
Depersonalization or derealization
Numbness or tingling sensations
Flushes, hot flashes or chills
Trembling or shaking
Fear of dying
Fear of going crazy or doing something uncontrolled
Not caused by any organic factor or circumscribed phobic stimulus
Isolated panic attacks are those occurring with insufficient frequency to diagnose panic disorder
Panic disorder
$\geq 3$ panic attacks within a 3-week period

**TABLE II** Patient Characteristics and Clinical Features

Patient Characteristics and Clinical Features	MVP Group (%)	Control Group (%)	p Value
Pts.	44	55	---
Women	34 (77)	41 (74)	NS
Men	10 (23)	14 (26)	NS
Mean age (yr)	33 $\pm$ 8	30 $\pm$ 10	NS
Palpitations	28 (64)	36 (60)	NS
Chest pain/discomfort	20 (45)	27 (49)	NS
Presyncope/syncope	10 (23)	14 (25)	NS
Dyspnea, effort intolerance	8 (18)	12 (22)	NS
Isolated panic attacks	10 (23)	14 (25)	NS
Panic disorder	9 (20)	12 (22)	NS
Isolated panic attacks or panic disorder	19 (43)	26 (47)	NS

MVP = mitral valve prolapse syndrome; NS = not significant.

defined as clinical and echocardiographic MVP associated with otherwise unexplained chest pain, palpitations, syncope or effort intolerance (dyspnea), or a combination.<sup>1</sup> Panic attacks and panic disorder were defined in accordance with DSM-III-R<sup>2</sup> criteria (Table I).

Initially, 227 patients were considered for entry in the study. An organic etiology for symptoms other than MVP was identified in 133 patients. These patients were excluded. Thus, 94 patients entered the study. Of these patients, 44 had clinical and echocardiographic criteria for MVP (MVP group). Fifty patients had a normal cardiovascular examination and no evidence of organic heart disease on noninvasive cardiac tests (control group). Table II summarizes patient characteristics in these 2 groups.

Table II shows the frequency of isolated panic attacks or panic disorder, or both, in the MVP and control groups. There was no significant difference in the frequency of any form of panic between the 2 groups. The chi-square test was used to determine if the frequency of variables in the MVP group differed from those in the control group.

In an essay on soldier's heart, DaCosta's syndrome, and neurocirculatory asthenia and the effort syndrome, Wooley<sup>6</sup> persuasively draws a link between functional

**TABLE III** Reported Frequency of Panic Manifestations in Patients with Mitral Valve Prolapse—Controlled Studies

Investigator	Frequency of Panic Manifestations (%)					
	n	MVP Group		n	Control Group	
		Isolated Panic Attacks	Panic Disorder		Isolated Panic Attacks	Panic Disorder
Kane <sup>3-5</sup>	65	25	8	33* 22†	14	6
Hartman <sup>3-5</sup>	141	21	16	70‡	5	5
Hickey <sup>3-5</sup>	103	—	3	67*	10	3
Devereaux <sup>3-5</sup>	88	16	14	172§	8	2
Mazza <sup>3-5</sup>	48	—	0	60†	3	2
Present study	44	23	20	55	25	22

\*With nonspecific cardiac symptoms; †asymptomatic normal control subjects; ‡family members; §first-degree relatives and normal unmatched control subjects. MVP = mitral valve prolapse.

cardiac disorders and the MVP syndrome. To this end, several investigators have explored the relation between MVP and panic disorder.<sup>3-5</sup> In studies of patients with panic disorder, the reported frequency of MVP ranges from 7 to 34%, and does not exceed that of normal control subjects or that expected based on age and gender distribution.<sup>3-5</sup> The present study focused on the frequency of isolated panic attacks and panic disorder in patients with the MVP syndrome.

Controlled studies assessing the frequency of panic attacks and panic disorder in patients with the MVP syndrome have produced conflicting results.<sup>3-5</sup> The results of these studies are summarized in Table III together with the results of the present study.<sup>3-5</sup> The observed disparity may be attributable in part to differences in the diagnostic criteria for MVP and panic disorder, but is primarily due to variations among the control groups.<sup>3-5</sup> Because of the overlap in clinical manifestations, it is predictable that panic manifestations will occur with higher frequency in patients with the MVP syndrome than in normal (presumably asymptomatic) control subjects. Conversely, it is not surprising that control groups of "normal" patients with cardiovascular symptoms would demonstrate a high frequency of isolated panic attacks and panic disorder owing to unavoidable ascertainment bias. The possibility of ascertainment bias is not eliminated in the present study; however, the design of the study ensures equal bias in the MVP and control groups.

This study shows that there is a high rate of co-occurrence of the MVP syndrome and panic manifestations. The results do not demonstrate that isolated panic attacks and panic disorder occur with disproportionately high frequency in patients with the MVP syndrome.

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