

Panic Disorder in Children at High Risk for Depression

Donna L. Moreau, M.D., Myrna Weissman, Ph.D., and Virginia Warner, M.P.H.

While conventional clinical wisdom has been that panic disorder does not occur in children, evidence derived from structured diagnostic interviews suggests that panic disorder, similar in symptom pattern to the adult disorder, does occur in children and can occur before puberty.

(Am J Psychiatry 1989; 146:1059-1060)

Conventional clinical wisdom has been that panic disorder does not occur in children (1). Recently, there have been isolated clinical reports on the existence of panic disorder in children (2, 3). However, with the exception of the two cases reported by Vitiello et al. (3), the diagnoses have not been based on structured diagnostic interview.

Although small studies have been conducted (4, 5), to our knowledge there have been no large epidemiological studies of children or adolescents that used *DSM-III* criteria to determine the prevalence of psychiatric disorders, including panic disorder. However, a recent study by Hayward et al. (6, elsewhere in this issue) of 95 ninth-grade high school students found, on the basis of clinical interview, that the lifetime prevalence of four-symptom panic attacks was 11.6%. Epidemiological studies of adults who retrospectively reported their age at onset of panic disorder suggest that onset of panic disorder can be quite early. Results from the National Institute of Mental Health Epidemiologic Catchment Area Study showed a peak onset of panic disorder between the ages of 15 and 19 years, with onset before puberty in some cases (7).

Retrospectively taken childhood histories of adults with panic disorder, studies of the parents of children with anxiety disorders, and studies of children with

depressed and anxious parents lend support to an association between adult and childhood forms of anxiety disorders. Specifically, studies of adults with panic disorder have found cases of onset of panic disorder in childhood or early adolescence (8).

This paper presents symptom and diagnostic data on seven children with panic attacks. Six of these children met *DSM-III* criteria for panic disorder on the basis of direct, structured diagnostic assessment with the Schedule for Affective Disorders and Schizophrenia for School-Age Children, Life-Time Version (Kiddie-SADS-L).

METHOD

The subjects were part of a study of 220 children, ages 6 to 23 years, who were at high or low risk for depression by virtue of their parent's diagnosis. Children of depressed parents were matched by age and sex to children of nondepressed parents. Detailed methodology is presented elsewhere (9). Because this study determined age at onset of psychiatric disorders on the basis of retrospective report, subjects included individuals up to 23 years of age. Subjects and their parents were interviewed separately with the Kiddie-SADS-L during the initial assessment by a trained interviewer with clinical experience. At 2-year follow-up the children were interviewed again with the Kiddie-SADS-L. *DSM-III* diagnoses of children were made by a child psychiatrist and a child psychologist on the basis of all available information from both interviews, as well as school and psychiatric records where available; the child psychiatrist and psychologist were blind to the parents' clinical condition. Agreement between the psychiatrist and psychologist was excellent ($\kappa = 0.69$ for anxiety disorders in the 220 children) (10).

RESULTS

Of the 220 children, four girls and three boys, who ranged in age from 11 to 23 years at the time of initial assessment, were found to have panic symptoms (see table 1). Six of the seven children met the criteria for panic disorder. One child did not have panic attacks with sufficient frequency to meet the diagnostic criteria. The age at onset of panic disorder ranged from 5 to 18 years. In four cases onset was before puberty.

During the first interview, four of the children recalled panic symptoms, all of which had occurred

Presented at the 141st annual meeting of the American Psychiatric Association, Montreal, May 7-12, 1988. Received July 26, 1988; revision received Jan. 11, 1989; accepted Feb. 13, 1989. From the Department of Psychiatry and Division of Child Psychiatry, College of Physicians and Surgeons, and the School of Public Health, Columbia University, New York; and the Department of Clinical-Genetic Epidemiology, New York State Psychiatric Institute. Address reprint requests to Dr. Moreau, Department of Psychiatry, Division of Child Psychiatry, New York State Psychiatric Institute, 722 West 168th St., New York, NY 10032.

Supported in part by NIMH grants MH-36197 and MH-28274 from the Affective and Anxiety Disorders Research Branch and by grant 86-213 from the John D. and Catherine T. MacArthur Foundation Mental Health Research Network.

Copyright © 1989 American Psychiatric Association.

TABLE 1. Age, Age at Onset, Symptoms, and Comorbidity in Seven Children With Panic Symptoms

Item	Patient						
	1	2	3	4	5	6	7
Age (years)							
At second interview	17	20	11	18	23	14	11
At onset of panic	9	18	5	10	12	13	6
Sex	M	F	M	F	F	F	M
Symptoms							
Shortness of breath	+	+	+	+	+	+	+
Palpitations	+	+	+	+	+	+	+
Chest pain	+	+		+	+		
Choking		+		+	+		
Dizziness		+		+	+		
Sweating		+		+			+
Trembling			+		+	+	
Fears of death	+		+		+	+	
Faintness	+		+	+	+		
Feelings of unreality				+		+	+
Tingling					+		+
Hot and cold flashes					+		
DSM-III diagnoses							
Most common							
Panic disorder			+	+	+	+	+
Major depression	+	+		+	+	+	
Separation anxiety disorder	+		+	+	+		+
Total	5	4	5	3	3	2	2

within 1 year of the interview, and five of the parents reported previous panic symptoms in their children. During the follow-up interview, two of the subjects were still experiencing panic attacks. Only subjects who were currently symptomatic reported panic symptoms at the follow-up interview.

Symptoms were similar to those found in adults with panic disorder (see table 1). Feelings of panic, anxiety, or fear occurred suddenly and were accompanied by multiple physical and psychological symptoms. All of the children reported shortness of breath, and the majority had palpitations. Symptoms reported by half of the subjects included sensations of chest pain, choking, dizziness, sweating, trembling, or fainting; fears of death; and feelings of unreality. The mean number of symptoms for each subject was 6.1.

All of the children had other diagnoses, most commonly major depression and separation anxiety disorder. The onset of panic disorder either occurred in conjunction with separation anxiety disorder or major depression or followed the onset of separation anxiety disorder by at least several months. Although several of the subjects used illicit drugs and alcohol, only one met the criteria for substance abuse. Four of the seven children had at least one parent with panic disorder in addition to depression. All cases of panic disorder were found in the children at high risk for depression; no cases were found in the children of nondepressed parents.

DISCUSSION

The findings suggest that panic disorder does occur in children and can occur before puberty. The symp-

tom pattern and high comorbidity with major depression are similar to those found in adults. It must be noted that the children we studied did not represent a probability sample of a community. Because panic disorder occurred in the children of depressed parents and not those of nondepressed parents, the frequency with which the disorder occurred is probably exaggerated.

In this study we used the child psychiatrist's and psychologist's best estimate, based on multiple sources of information, to determine the child's diagnosis. Agreement between psychiatrists was excellent. There were discrepancies between parents' and children's reports, however. Parents were more consistent than the children in reporting past episodes of panic. Of the four children who reported panic symptoms, all either were experiencing symptoms at the time of the interview or had experienced symptoms within a year of the interview. The children were able to report the phenomenology of panic attacks when they were symptomatic, but in their retrospective reports they failed to note past panic episodes that the parents reported.

These findings, if replicated, would suggest that systematic assessment of panic disorder should be part of a general psychiatric workup of children, particularly children at risk by virtue of depression in the parent. A host of questions remain. We do not know the continuity of childhood panic disorder into adulthood, the clinical course or its impact on development, or the actual prevalence. While there is good evidence for the efficacy of pharmacologic and behavioral treatment of panic disorder in adults (11), the efficacy of these treatments in children is unknown.

REFERENCES

- Gittelman-Klein R, Klein DF: Adult anxiety disorders and childhood separation anxiety, in *Handbook of Anxiety*, vol 1: Biological and Cultural Perspectives. Edited by Roth M, Noyes R Jr, Burrows GD. New York, Elsevier, 1988
- Van Winter JT, Stickler GB: Panic attack syndrome. *J Pediatr* 1984; 105:661-665
- Vitiello B, Behar D, Wolfson S, et al: Panic disorder in prepubertal children (letter). *Am J Psychiatry* 1987; 144:525-526
- Anderson JC, Williams S, McGee R, et al: DSM-III disorders in preadolescent children. *Arch Gen Psychiatry* 1987; 44:69-81
- Kashani JH, Orvaschel H: Anxiety disorders in mid-adolescence: a community sample. *Am J Psychiatry* 1988; 145:960-964
- Hayward C, Killen JD, Taylor CB: Panic attacks in young adolescents. *Am J Psychiatry* 1989; 146:1061-1062
- Von Korff MR, Eaton WW, Keyl PM: The epidemiology of panic attacks and panic disorder: results of three community surveys. *Am J Epidemiol* 1985; 122:970-981
- Sheehan DV, Sheehan KE, Minichiello WE: Age of onset of phobic disorders: a reevaluation. *Compr Psychiatry* 1981; 22:544-553
- Weissman MM, Leckman JF, Merikangas KR, et al: Depression and anxiety disorders in parents and children. *Arch Gen Psychiatry* 1984; 41:845-852
- Weissman MM: Psychopathology in the children of depressed parents: direct interview studies, in *Relatives at Risk for Mental Disorders*. Edited by Dunner DL, Gershon ES, Barrett JB. New York, Raven Press, 1988
- Frances AJ, Hales RE (eds): *American Psychiatric Press Review of Psychiatry*, vol 7. Washington, DC, American Psychiatric Press, 1988