

## LATE ONSET PANIC DISORDER: EVIDENCE FROM A STUDY OF PATIENTS WITH CHEST PAIN AND NORMAL CARDIAC EVALUATIONS

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### ABSTRACT

In the context of administering psychiatric diagnostic interviews to cardiology patients with chest pain and no evidence of coronary artery disease, the authors found twenty-seven patients over the age of sixty-five, nine (33%) of whom fit panic disorder criteria. Their mean age of onset was sixty-two (SD = 23 years). Only two patients reported onset of panic disorder earlier than age sixty-two. All nine were widows while the comparison group of non-panic subjects over age sixty-five included only seven of eighteen (40%) who were widows. These findings suggest panic disorder may be prevalent in older patients with chest pain and no evidence of coronary artery disease and that panic disorder may begin later in life.

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**Key Words:** Geriatric, panic disorder, chest pain, coronary artery disease, normal coronary arteries

Panic disorder has generally been described as having an age of onset in the early to mid-twenties [1] and its occurrence for the first time in later life documented via an occasional case report [2, 3]. Regier et al. concluded from their one-month prevalence study of psychiatric disorders that in the sixty-five plus age group females continued to have measurable rates of panic disorder while males did not [4]. This group was not well characterized. Perhaps by inspecting our data set of patients with no evidence of coronary artery disease [5, 6] we could further

characterize the geriatric panic patients recognizing the limitations of this highly selected sample. First we contrast geriatric panic patients with geriatric non-panic patients. Second we contrast geriatric panic patients with non-geriatric panic patients.

## METHOD

The subjects, the SCID-UP (Structured Clinical Interview for DSM-III-R, Upjohn Version) interview, the self-report measures and procedures by which the data were gathered are described elsewhere [5-7].

Analysis of systematic bias, inter-rater reliability, and the ninety-one subjects out of 187 who fit panic disorder criteria are also described elsewhere [5-7].

## RESULTS

### Subjects Age Sixty-Five and Older with Panic Disorder (PD)

Of the total sample of 187 patients, twenty-seven (14.4%) were sixty-five years of age or older 65(+). Of those twenty-seven patients, nine (33.3%) were also PD(+). Thus, patients who were both sixty-five years of age or older and positive for PD, PD(+)/65(+) represented 9.9 percent of the total number of PD(+) patients ( $n = 91$ ). PD(+)/65(+) patients had a mean age for panic symptom onset of 62.4 years ( $SD = 22.8$  years). Because of the large standard deviation we examined the specific ages of onset for these nine subjects. The range for seven of these patients was sixty-two to eighty-three years old. One outlying subject began having panic disorder at age twelve and another at age forty thereby accounting for the large standard deviation. PD(+)/65(+) patients reported experiencing a mean of 5.4 panic attacks ( $SD = 6.1$  panic attacks) in the week prior to the interview, with their last typical panic episode involving a mean of 8.8 panic symptoms ( $SD = 2.7$  symptoms).

### Cross-Sectional Comparisons

*Comparison between patients age sixty-five years or older with and without panic disorder* — Table 1 shows demographic variables for PD(+)/65(+) and PD(-)/65(+) patients. Using Chi-square analysis, group comparisons on age, marital status and social status found significant differences for marital status only. Because these are simultaneous multiple comparisons, we use the more conservative .01 level of significance rather than the .05. As seen in Table 1, group difference in marital status primarily reflects the finding that all PD(+)/65(+)

Table 1. Demographic Data for Study Subjects Sixty-five Years of Age or Older with and without Panic Disorder<sup>a</sup>

	<i>Subjects Sixty-five Years of Age or Older</i>			
	<i>Panic Disorder</i>		<i>No Panic Disorder</i>	
	<i>n = 9</i>		<i>n = 18</i>	
	<i>n</i>	<i>Percent</i>	<i>n</i>	<i>Percent</i>
Sex				
Male	0	0.0	3	16.7
Female	9	100.0	15	83.3
Marital Status*				
Married	1	11.1	10	55.6
Separated/Divorced	0	0.0	1	5.6
Never Married	0	0.0	0	0.0
Widowed	8	88.9	7	38.9
Social Class				
I, II, III, IV	0	0.0	5	27.8
V, VI, VII, VIII, IX	9	100.0	13	72.2

\* =  $p < .05$ <sup>a</sup> Chi-square

subjects had been widowed as compared to the PD(-)/65(+) group where the majority of spouses were alive at the time of this study. In addition four of the nine PD(+)/65(+) subjects reported a life time history of major depression as did four of the eighteen PD(-)/65(+) subjects. Three of the former and none of the latter reported a current major depression. Using Chi-square, none of these distributions were statistically significant.

Utilizing chi-square analyses and  $p < .01$  significance level, we compared groups on current psychiatric and heart medication use including diuretics, beta blockers, calcium channel blockers, "other" antihypertensives, nitrates, digitalis derivatives, antiarrhythmics, benzodiazepines, antidepressants, neuroleptics, and "other" psychiatric drugs. These analyses revealed significant group differences for digitalis derivatives only ( $\chi^2 (1, 27) = 8.9, p = .003$ ). Of the PD(+)/65(+) subjects, 66.7 percent ( $n = 6$ ) were taking this drug as compared with only 11.1 percent ( $n = 2$ ) of the PD(-)/65(+) group.

In investigating group differences on self-report psychological instruments [Self-report Anxiety Scale (SAS), Beck Depression Inventory (BDI), Brief Symptom Inventory (BSI)], multivariate analysis of variance (MANOVA) showed a significant multivariate main effect [ $F(3,21) = 5.54, p < .01$ ]. Follow-up analyses of variance (ANOVAs) revealed significant main effects ( $p < .05$ ) for all self-report instruments. For all the self-report measures, PD(+)/65(+) patients reported significantly more symptoms than PD(-)/65(+) patients:

Table 2. Demographic Data for Panic Disorder Patients Sixty-Five Years of Age or Older and Under Sixty-Five Years of Age<sup>a</sup>

	Panic Disorder Patients			
	Sixty-Five Years Old or Under <i>n</i> = 9		Under Sixty-Five Years Old <i>n</i> = 82	
	<i>n</i>	Percent	<i>n</i>	Percent
Sex*				
Male	0	0.0	31	37.8
Female	9	100.0	51	62.2
Marital Status**				
Married	1	11.1	57	69.5
Separated/Divorced	0	0.0	14	17.1
Never Married	0	0.0	8	9.8
Widowed	8	88.9	3	3.7
Social Class				
I, II, III, IV	0	0.0	35	42.2
V, VI, VII, VIII, IX	9	100.0	48	57.8

\* =  $p < .05$ \*\* =  $p < .01$ <sup>a</sup> Chi-square

SAS— $M = 43.3$  ( $SD = 7.9$ ) vs.  $M = 34.5$  ( $SD = 6.2$ ); BSI— $M = 47.6$  ( $SD = 19.3$ ) vs.  $M = 29.5$  ( $SD = 21.5$ ); BDI— $M = 17.4$  ( $SD = 6.8$ ) vs.  $M = 9.0$  ( $SD = 4.8$ ).

*Comparison of panic disorder patients who are sixty-five years or older with panic patients under sixty-five years old* — Table 2 shows demographic data for PD(+)/65(+) vs. PD(+)/65(-) patients. Not surprisingly, PD(+)/65(+) patients were significantly more likely to be widowed than PD(+)/65(-) patients, and also the former group was somewhat more likely to report a lower socio-economic status [ $\chi^2(1,93) = 6.13, p = .01$ ]. Of interest also are findings showing that PD(+)/65(+) patients are marginally significantly more likely to be female than are PD(+)/65(-) patients [ $\chi^2(1,91) = 5.15, p < .03$ ].

*T*-tests were utilized in order to contrast PD(+)/65(+) and PD(+)/65(-) groups on the age of onset for panic disorder, number of panic attacks reported for the week preceding the SCID-UP interview, and the duration of their panic disorder. A significant group effect was found for the age of onset variable only [ $t(8.4) = 3.58, p < .01$ ]. This analysis showed that PD(+)/65(+) patients had a significantly later age of disorder onset than did PD(+)/65(-) patients ( $M = 62.4$  years,  $SD = 22.8$  years, vs.  $M = 34.8$  years,  $SD = 11.3$  years, respectively).

A MANOVA conducted for group by self-report instruments did not demonstrate a significant multivariate effect. Because this finding suggests that

PD(+)/65(+) and PD(+)/65(-) groups did not differ on self-report psychological symptomatology, further investigation of this question with instrument subscales was not pursued.

Finally, groups were compared using Chi-square on current psychiatric and heart medication use (as listed above). These analyses revealed a marginally significant group effect for benzodiazepines [ $\chi^2(1,88) = 5.32, p = .02$ ] and a significant effect for digitalis [ $\chi^2(1,88) = 34.78, p < .0001$ ] along with a marginal effect for nitrates [ $\chi^2(1,88) = 3.26, p = .07$ ]. In each of these analyses, significantly more PD(+)/65(+) patients were taking medications than were PD(+)/65(-) patients.

## DISCUSSION

This report suggests that panic disorder may appear for the first time in later life. In seven of the nine patients described, the panic disorder was not an extension from earlier years having started between the ages of sixty-two to eighty-three. These elderly panic disorder patients differ from their panic-free counterparts in that they were more likely to be on digitalis preparations probably because their symptoms more closely resembled heart disease. They were also more likely to have more self-reported symptoms relating to anxiety, and depression (as measured by the SAS, BDI, and BSI). In addition 100 percent of the 65 (+)/PD(+) vs only 40 percent of the 65 (+)/PD (-) patients were widows. The literature on panic disorder mentions that "panic disorder is often precipitated by a loss . . . [and that] these patients often give a history of sudden loss of a significant other with whom they have an unresolved dependency conflict" [8]. Thus loss of a spouse may be associated with panic disorder in older individuals. Our sample size limits the scope of this conclusion.

In comparing later-life onset panic disorder patients with younger panic patients, there were no significant group differences except that they were more likely to be taking digitalis and to have a later onset of panic disorder. There were no group differences in the relative number of panic attacks reported in the week prior to the SCID interview or duration of panic disorder. This finding suggests that the phenomenology of panic disorder in later life is similar to that of younger patients.

Evidence suggests that panic disorder is uncommon in people over the age of sixty-five [9]. Age of onset is usually in the late teens to early thirties in patients appearing in psychiatric clinics [10] but is somewhat later in patients in cardiology settings [5, 6]. If the nine subjects over age sixty-five are removed from the analysis, mean age of onset for the remainder is age thirty-five. Understandably these elderly patients do not appear in psychiatric clinics since their symptom complex resembles that of angina and often leads to cardiac work-ups. However, this diagnosis should be considered in any patients with no evidence of coronary artery disease because panic disorder is readily treated with either

pharmacotherapy [11] or psychotherapy [12] as shown by several controlled clinical trials. The evidence from this study suggests that some older patients do fit panic criteria. Clinical experience suggests that these patients are responsive to treatment if the diagnosis is considered although no controlled trials have yet been performed on this age group.

Because this was a retrospective analysis of a data set gathered to ask the more general question of the existence of panic disorder in the entire population of cardiology patients with chest pain and no evidence of coronary artery disease, this report is methodologically limited. The study was not designed for older adults and, except for heart disease, no attempts were made to rule out other disorders including dementia. It is possible that some of the panic symptoms were iatrogenic secondary to cardiology medications or due to other unrecognized medical problems. Although controversial some may have had microvascular angina [13]. The potential instability in our findings due to a small sample size and a large number of group comparisons, demands that this study be replicated before firm conclusions regarding panic disorder in the elderly may be drawn. Furthermore, the generalizability to psychiatric populations is questionable since the patients by the act of seeking cardiological evaluation demonstrated the belief in a cardiological etiology. However, our findings lend support to earlier reports suggesting that panic disorder can be found in geriatric populations and that it may be late onset.

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