A COMPARATIVE STUDY OF PSYCHOLOGICAL FACTORS IN PATIENTS WITH NORMAL AND ABNORMAL ANGIOGRAPHIC FINDINGS

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ABSTRACT

Chest pain is one of the most common symptoms in psychiatric and primary care practice and a frequent reason for extensive diagnostic work-up. Despite extensive investigations no recognizable medical cause to account for these symptoms is detected in many patients with chest pain. Studies of patients with non-cardiac chest pain have revealed that many continue to report symptoms and disability despite medical reassurances.

The aims of the study were to evaluate the prevalence of psychiatric morbidity, personality profile and stressors alongwith functional impairment in patients with chest pain and normal angiographic findings and compare the same with patients who have chest pain but abnormal angiographic findings and a diagnosis of ischemic heart disease.

The study included 30 consecutive patients in each group. The scales used were SCID-I of DSM-III-R, 16-PF, semistructured questionnaire for assessment of type A behaviour, PSLES and GAF scale of DSM-III-R.

Panic disorder and depression were highly prevalent in patients with atypical chest pain. These patients had lower prevalence of type A behaviour, a unique 16-PF profile, experienced more stresses at any given point in time and significant impairment in day-day and in socio-occupational functioning.

Key words : Chest pain, angiography, somatization

The link between the heart and the emotions has been described for thousands of years in religious writings and in ancient medical texts. In modern medicine, psychosomatic physicians have described links between stressful life events, specific personality traits and the development of ischaemic heart disease and hypertension (Katon et al.,1992). Chest pain is one of the most common symptoms in psychiatric and in primary care practice and is a frequent reason for extensive diagnostic work-up. Despite extensive investigations no recognizable medical cause to account for the symptoms is detected in many patients. Studies of patients with non-cardiogenic chest pain have revealed that many continue to report symptoms and disability despite medical reassurances (Chamber & Bass,1990; Channer et al.,1987; Proudfit et al.,1980; Tyrer et al.,1980).

Increasing attention is being paid to the interaction between psychiatric disorders, cardiac symptoms and cardiac disease (Channer et al.,1985; Isner et al.,1981; Marchandaise et al.,1978). Alexander et al.(1994) report that 68% patients in the non-cardiogenic chest pain group and 27% in the ischaemic heart disease group had a mental disorder. Their study was based on the treadmill test and included 54 male inpatients from a cardiology general ward in India. The stress test is not a very sensitive test

in picking up cardiac pathology. Hence it was decided to study those patients who had a presenting complaint of chest pain but had normal angiographic findings thereby increasing the sensitivity of the investigation to rule out any cardiac pathology whatsoever.

AIM

The aims and objectives of the study were:
1. To study the prevalence of psychiatric morbidity in patients with chest pain and normal coronary angiographic findings and comparing the same with the prevalence of psychiatric morbidity in patients with ischaemic heart disease.
2. To study the personality characteristics in patients with the chest pain and normal coronary angiographic findings and comparing these with the same in patients with ischaemic heart disease.
3. To study the stressful life events in patients with chest pain and normal coronary angiographic findings and quantitatively comparing these with the same in patients with ischaemic heart disease.
4. To study the functional impairment in both the above mentioned groups.

MATERIAL AND METHOD

For the study, 2 groups were considered :
1. Cases/group A : 30 consecutive patients with normal coronary angiography.
2. Controls/group B : 30 consecutive patients with abnormal coronary angiography and a diagnosis of ischaemic heart disease.
The inclusion criteria were :
1. Presenting complaint of chest pain.
2. Angiography done from the Cardiology department of a Municipal hospital in Mumbai.
3. Patients were taken irrespective of whether they had mental symptoms or not.
The exclusion criteria were :
1. Any other major physical or organic illness.
2. Rheumatic heart disease, valvular heart disease, ischaemic cardiomyopathy and

congenital heart disease in the controls/group B.

Consent for participation in research was taken from each patient after which a detailed clinical history, thorough physical examination and required investigations were performed to rule out other organic or physical illnesses. The patients were interviewed post coronary angiography. The scales used were : SCID-I.of DSM-III-R (Spitzer et al.,1988), 16-Personality Factors (16-PF) test (Mahesh Bhargava), Presumptive Stressful Life Events Scale (PSLES) (Gurmeet Singh,1981) and Global Assessment of Functioning Scale of DSM-III-R. For the purpose of statistical analysis, 16-PF scores were divided into high, average and low groups for each trait. Stressors during life time ($>=10$) and last 1 year ($>=2$) were scored on PSLES. Statistical analysis was performed using the chi-squared test.

RESULTS

In group A, 93% of patients belonged to 30-60 years age group whereas in group B, 74% of patients were in the 30-60 years age group, the rest being in the greater than 60 years age group. Group A patient population had an equal distribution compared with 84% males in group B, a statistically significant difference. 50% of the population in group A was unemployed (as it included a greater number of housewives) as compared to 34% of patients in group B who were retired. No significant differences were found between the two groups as regards educational status, marital status, family structure, socio-economic class. Number of children, place of residence, religion and nativity. This could be due to the fact that all the patients were taken from the same hospital.

In group A, 87% of patients received a psychiatric diagnosis whereas in group B, 47% received a psychiatric diagnosis. This difference within the two groups was statistically significant. Of the group A patients who received a psychiatric diagnosis 40% had panic disorder and 30% had depression. Adjustment disorder was found in 2 patients and 1 patient each received

a diagnosis of generalized anxiety disorder, somatization disorder and schizophrenia. On the other hand 23% patients had depression and 13% patients had panic disorder in group B. Generalized anxiety disorder was diagnosed in 2 patients and 1 patient received a diagnosis of adjustment disorder (Table 1).

TABLE 1
DIAGNOSTIC BREAK-UP

DIAGNOSIS	GROUP A N=26	% 87	GROUP B N=14	% 47
Panic Disorder	12	40	4	13.33
Depression	9	30	7	23.33
Schizophrenia	1	3.33	0	
GAD	1	3.33	2	6.66
Somatization	1	3.33	0	
Adjustment Disorder	2	6.66	1	3.33

$X^2=9.075$, d.f. :1, p< 0.05, significant (for presence of Type A behaviour)

There was a statistically significant difference between the two groups with group B having 57% patients having type A behaviour pattern as compared 30% patients in group A. Group A patients scored higher on scales F (desurgency-surgency); N (artlessness-shrewdness); O (adequacy-guilt proneness) and Q2 (group adherence-self sufficiency). The differences between the groups were statistically significant. These patients scored lower on scales Q4 (ergic tension); L (alaxia-protension); I (harria-premsia); H (threctia-parmia); G (superego strength); E (submissiveness-dominance); and Q1 (conservatism-radicalism). Of these the differences between the 2 groups were significant for traits L,E and Q1. There were

TABLE 2
TYPE 'A' BEHAVIOUR & 16-PF
SIGNIFICANT FINDINGS (P<=0.05)

Trait	Group A	%	Group B	%	X^2	d.f.
E	Low	64	High	57	6.701	2
F	High	54	Low	60	8.391	2
L	Low	60	High	54	8.325	2
M	AV	70	Low	50	6.995	2
N	AV-High	86	AV-Low	86	6.606	2
O	AV-High	70	Low	57	6.018	2
Q1	AV-Low	67	High	57	6.4	2
Q2	AV-High	70	Low	60	7.058	2
Type "A"	N=9	30	N=17	57	4.34	1

All values of X^2 are significant

no significant differences found between the groups on the remaining scales, the distribution almost similar within the groups (Table 2).

Statistically significant differences were found between the 2 groups ($p \le 0.01$) with 57% of group A patients reporting more than or equal to 2 stressful events in the last 1 year compare with 24% of group B patients. Statistically significant differences were also found between the groups ($p \le 0.01$) with 57% of group A patients reporting more than or equal to 10 stressors in their lifetime compared with 30% of group B patients.

Statistically significant difference was found between the 2 groups with 73% of group A patients showing more than moderate impairment in functioning as compared with 60% of group B patients (Table 3).

TABLE 3
STRESSORS (LAST 1 YEAR AND LIFETIME)
AND FUNCTIONING (GAF)

	GROUP A		GROUP B	
	N	%	N	%
Last 1 year				
< 2	13	43.33	23	77
≥ 2	17	56.66	7	23
$X^2=6.994$; d.f.=1; p < 0.01				
Life time				
< 10	13	43.33	21	70
≥ 10	17	56.66	9	30
$X^2=4.34$; d.f.=1; p < 0.05				
> moderate impairment				
Yes	22	74	12	40
No	8	26	18	60
$X^2=6.787$; d.f.=1; $p \le 0.01$				

DISCUSSION

Comparing with the previous studies that were carried out (Cormier et al.,1988) it was found that a younger age group was seen in patients with atypical chest pain which was also found in our day. In addition Katon et al.(1988), Channer et al.(1985) and Cormier et al.(1988) have found that there was a female preponderance in atypical chest pain. This was not found in our study.

Previous studies have shown that majority

of patients having atypical chest pain (47%-78%) (Bass,1990; Bass & Wade,1984) end up having a psychiatric diagnosis. Of these, 47% of the patients have a diagnosis of panic disorder (Ehlers et al.,1986; Ehlers et al.,1988; Frasure Smith,1987) closely followed by depression in 39%. In this study upto 87% of patients with atypical chest pain received a psychiatric diagnosis with 40% having panic disorder and 30% having depression. Beitman et al.(1988, 1989) found that 34% patients of atypical chest pain fit DSM-III-R diagnosis of panic disorder. Cormier et al.(1988) in two different studies found that patients with atypical chest pain had a greater prevalence of panic disorder (upto 47%) and major depression (39%) than patients with ischaemic heart disease. Mukerji et al.(1987) also found about 40% of their patients with atypical chest pain to have panic disorder. Colgan et al.(1988) found a wide variation in the incidence of psychiatric morbidity (18%-59%) in this group of patients whereas Alexander et al.(1994) found a prevalence as high as 68% of psychiatric disorders in these patients.

The relationship of type A behavioural pattern with coronary artery disease is well known (Katon et al.,1992) and has been investigated for more than 3 decades. The results of the research appear to be conflicting since many studies describe a strong relation (Friedman et al.,1982) but the others report that type A behaviour is not reliable predictor of coronary artery disease. A predominance of type A behaviour pattern was found in group B i.e. in those who had ischaemic heart disease in this study. Personality factors like high neuroticism are described in patients with atypical chest pain (upto 30%) (Lantinga et al.,1988). Vitaliano et al. (1989) proposed that typical chest pain patients scored significantly higher on a problem focused coping scale rather than those who had chest pain and a normal coronary angiography who scored higher on scales on wishful thinking, avoidance and lower on measures of seeking social support. Scores on a self blame measure were not different across the groups. Weilgosz et al.(1984) stated that a high hypochondriasis

score on the MMPI was a predictor for the duration of pain in patients with atypical chest pain. Many of the above traits were highlighted on the 16-PF profile with group A patients scoring high on surgency (happy-go-lucky), shrewdness (worldly), guilt proneness (worrying and troubled) and preferring his or her own decisions. Group A patients scored low on ergic tension (more tranquil), trust (easy to get along with), realism, shyness, superego strength, submissiveness and conservatism (tolerant of traditional difficulties) traits.

More stressors were reported by patients with atypical chest pain in the last 1 year and throughout their lifetimes. A high level of neuroticism is also described in patients with atypical chest pain (Lantinga et al.,1988) because of which they perceive more stressors. Vasquez Barquero et al.(1985a, 1985b) stated that personal and socio-cultural stressors play a significant role in the development of atypical chest pain. Katon et al.(1988 & 1986) found that patients with atypical chest pain had a chronic non-progressive course and had more socio-occupational problems. Bass (1989) reported that these patients continue to report symptoms and disability despite medical reassurances. Ockene et al.(1980) reported that 70% of patients with atypical chest pain continue to experience chest pain and 47% described their usual daily activities to be limited by chest pain. Lavey & Winkle (1979) also reported 79% of patients to have physical limitations and 82% of them continued to see physicians because of cardiac complaints.

In conclusion, patients with atypical chest pain had a high prevalence of panic disorder and depression. These patients had fewer type A behaviour patterns and a unique 16-PF profile. These patients faced more stressors at any given point in time. Facing a chronic and a non-progressive illness, majority of these patients had significant impairment in day to day and in socio-occupational functioning.

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