

## The patient with angina: symptoms and disability

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### Summary

Cardiac and mental states were assessed for forty men with angina pectoris, and relatives were interviewed as to symptoms and social disability.

Depression and anxiety together with irritability, fatigue and sleeplessness were common and minimization of such symptoms as well as of physical limitation was prominent. There were characteristic and major changes at work and in leisure and family life.

Disability was not closely related to physical handicap and it was evident that personality factors are of considerable significance in determining response and adaptation to angina.

PATIENTS' responses to illness depend not only upon the actual physical handicap but upon the individual's perception of its meaning (Lipowski, 1969). Descriptions of coronary care units, follow-up studies after infarction and of attenders at rehabilitation centres have agreed in general terms on the importance of psychological factors in ischaemic heart disease. The accumulating evidence that angina sufferers may be especially anxious by predisposition suggests that study of the social consequences might be particularly interesting.

As with the response to all physical illness there is a lack of precise description and the present investigation was designed to examine mental state, cardiac function and social disability. The central theme is the use of measures of these variables and an analysis of their interrelations. The results have been considered in the context of the patient's social life at work and leisure, and place special emphasis on relatives' reports. In previous studies, angina pectoris has only been considered as a part of ischaemic heart disease, for which a number of writers have described serious psychological, employment and family difficulties which have been reviewed by Croog, Levine & Lurie (1968). Accounts of ischaemic heart disease (e.g. Klein *et al.*, 1965; Wishnie, Hackett & Cassem, 1971), report a picture of mixed anxiety and depressive symptoms but there has been little attempt to fully describe mental states or relate

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psychological findings either to disability or to measures of clinical severity. Dovenmuehle & Vervoedt (1962) found no relationship in a group of cardiac patients between clinical ratings or cardiac abnormality and psychological response. Recently Nagle, Gangola & Picton-Robinson (1971) have been unable to relate cardiological assessment to delay in returning to work after infarction.

### Methods

Forty men with an out-patient diagnosis of angina pectoris who were consecutive admissions to two specialized cardiac departments for full physical assessment were interviewed. Both hospitals had a special interest and experience in research and in the treatment of angina and had similar policies of brief admission to determine further medical or surgical treatment. A semi-structured interview was devised to cover a full medical and social history of symptoms, treatment, attitudes and psychosocial consequences. All were aware of the author's research interest and appeared to welcome the opportunity to anxieties. Relatives were also interviewed wherever possible. Quantative assessments were made under discuss freely and privately their problems and three headings; cardiac function, social disability and mental state.

### Disability

There is no established definition of disability but it has been used in a broad sense as change in activity at work and in leisure since the onset of angina. Using all available information disability was separately rated on 3-point scales (0, nil or slight; 1, moderate; 2, severe change) both for work and for leisure. Summation of the two gave a final overall 5-point rating (0-4). Scoring was conducted separately by the author and an experienced medical social worker and disagreements resolved by discussion. Activity levels before angina for work and leisure were also rated on 3-point scales.

### Mental state

A schedule devised for use in general practice psychiatric surveys and extensively validated (Goldberg *et al.*, 1970) was found to be both appropriate

and very acceptable to patients. A systematic enquiry is made about any psychiatric symptoms the patient may have experienced in the preceding week. Using simple rules, the frequency and intensity of each ten groups of symptoms is rated on a 5-point scale and at the end of the interview manifest abnormalities are rated by the interviewer on twelve more 5-point scales.

A final psychiatric score is obtained by the sum of symptom ratings plus twice the sum of the manifest abnormalities ratings, a procedure recommended by the originators of the interview.

#### Cardiological severity

Assessment was made on the results of a standard exercise test and of all routine investigations together with the results of clinical examination, atrial pacing and usually coronary angiography. On the basis of considerable experience with these procedures (Balcon *et al.*, 1969) a simple rating of three grades of angina symptom-severity was devised by the cardiologist principally concerned.

#### Results

Forty men aged 38–64 were studied. The duration of angina symptoms varied from 6 months to 7 years, but for two-thirds it was less than 3 years. Seventeen patients had definitely been diagnosed as suffering previous myocardial infarction and in seven cases there was evidence of episodes which might have been infarction. Many patients were very uncertain as to the number of heart attacks they might have suffered. Thirty relatives were interviewed and in five other cases general practitioners knew the families well enough to give some information about family life.

#### Symptoms

*Precipitants.* Table 1 shows for each cardiac severity-grade the situations in which patients report symptoms. Although the medically severe suffer more frequent angina, it was difficult to classify individual histories. Not only is angina variable from day to day but patients differ very widely in the extent to which they adjust their lives to avoid chest pain.

While exertion is the most common precipitant it required persistent specific questioning to determine

exercise tolerance. Many men walk slowly, avoid exertion, or take rests and find it impossible to give any answer in terms of distance, or flights of stairs. Emotional precipitants, notably anger, anxiety and excitement were often mentioned and appeared to reflect individual mental state and personality. A number of men described how they deliberately detached themselves from a wide variety of possibly emotional situations.

Angina at night was clearly correlated to cardiac severity. Frightening dreams and lying awake and worrying about heart disease were both reported as specific causes of nocturnal chest pain.

*Atypical chest pain.* Seventeen patients described chest pains not compatible with standard medical descriptions, although most also had more characteristic symptoms. Dividing angina into mild and severe groups, atypical symptoms are associated with less severe cardiac handicap ( $P < 0.01$ ).

TABLE 2. Atypical pain and psychiatric score

Pain	Mean psychiatric score	Range
Typical	15.5	2–28
Atypical	22.8	3–38

Atypical pains were also associated with high psychiatric scores (Table 2) at a highly significant level ( $P < 0.01$ ). This conclusion is comparable with Lovell & Verghese's findings (1967) of higher neuroticism scores with atypical left chest pains after myocardial infarction.

*Coping behaviour.* The difficulty in classifying histories of angina drew attention to the wide variation in patients' attitudes to coping with their handicap. It was possible to classify a spectrum of behaviour from the exceedingly cautious to an over-active refusal to accept physical limitations, and this aspect of personality seemed to be a major determinant of disability and social outcome. There was no statistical relation to cardiac severity but those men who previously had set a high value on activity coped most actively after angina.

*Patients with no evidence of heart disease.* Four patients were judged after full medical assessment to show no evidence of ischaemic heart disease. They cannot be simply labelled 'cardiac neurosis' for each had previously been given a definite clinical diagnosis by a hospital specialist, as with the men described by Keyes (1965). Nonetheless, it would

TABLE 1. Percentage of patients reporting individual precipitants of chest pain for each cardiac grade

Cardiac severity grade	Exertion			Emotion			Sex	Night
	Occasional	Frequent	Total	Occasional	Frequent	Total		
Mild	78	10	88	55	20	75	20	20
Moderate	55	35	90	45	30	75	52	40
Severe	33	70	100	40	50	90	75	80

seem that their original symptoms were probably of largely psychological origin confirmed in the patient's mind by an over-cautious diagnosis. The following common factors were evident: atypical descriptions of chest pain; failed to benefit from trinitrin; rated as showing 'excessive concern about somatic symptoms' in mental state interview; predominantly cautious in the approach to exertion.

The psychological scores were high for two men. The other two patients, although scoring low in interviews, were described by informants as being depressed, anxious and irritable at home and were rated as minimizing symptoms.

### *Psychological response*

**Mental state.** Symptoms were common and prominent, indeed no less than twenty-one patients were scored above the arbitrary designation as a 'psychiatric case' used by the originators of the interview schedule. They could be broadly classified in diagnostic terms as: predominant depression (four patients); predominant anxiety (ten patients); or mixed anxiety and depression (seven patients).

Reports of insomnia, fatigue, apathy, lack of concentration and irritability were usual and will be discussed more fully elsewhere. Of the individual subscores only insomnia was associated with cardiac severity and it was notable that fatigue related to total psychiatric score but not to cardiac handicap.

Relatives reported a similar pattern of psychological effects. While irritability caused particular distress to families, apathy, lethargy, depression and anxiety were also frequently mentioned.

**Minimization of symptoms.** Minimization of physical and particularly psychological symptoms by patients is frequent. This tendency has been noted in previous studies of heart disease (Wishnie *et al.*, 1971; Nagel *et al.*, 1971; Croog *et al.*, 1971) and is rather different from the denial of diagnosis seen in acute illness.

An initial assessment was made of possible minimization during the interview and was based on either an observed difference between reported symptoms and overt mental state or on a more intuitive feeling derived from discrepancies in the full clinical history. Such minimization, observed in twenty-seven patients, was classified on the basis of all available information: doubt as to the diagnosis of heart disease (three patients); minimizing physical disability (three patients); or minimizing psychological symptoms, both at the interview and at home (seven patients) and symptoms described by other informants but not admitted in the interview (fourteen patients).

The clearest group is that of fourteen patients for whom other informants described considerable psychological problems in the home situation. Thus,

even in an investigation directed toward psychological difficulties and asking specific questions, interviews with patients themselves were inadequate to determine the full extent of psychological and physical disability. It was common for patients to project their own anxieties onto their families.

### *Disability, cardiac severity and psychological score*

The total disability ratings were analysed in relation to cardiac severity and mental-state scores. Table 3 demonstrates that psychiatric score was not

TABLE 3. Angina severity and psychiatric score

Angina severity	Number of patients	Mean psychiatric score
Mild	9	21.4
Moderate	17	13.0
Severe	10	22.0

related to cardiac rating and similarly there was no significant association of cardiac severity and disability. However the relation of disability and psychiatric score is definitely significant ( $P > 0.01$ ).

A more sophisticated method of looking at the results is a correlation matrix. The multiple correlation co-efficient was 0.492; that is to say a quarter of the variance in disability scores is accounted for by the psychiatric and cardiac severity scores. No substantial improvement in statistical findings was obtained when alternative definitions of disability were scored or when psychiatric score was adjusted to allow for minimization.

The results confirm and go beyond the impressions of a number of writers (e.g. Dovenmuehle & Vervoedt, 1962; Nagle *et al.*, 1971) that the handicaps of heart disease are not simply related to physical handicap. The conclusion that only a proportion of the variance in disability may be explained by the parameters of mental state and cardiac grade stresses the need to consider personality and coping ability as well as overt psychological state. This investigation provides evidence that more precise examination of responses to physical illness is both possible and necessary.

**The nature of disability.** As in other series many men reported considerable difficulty at work and indeed of those with proved angina, twelve were unemployed, eleven had changed to lighter jobs and three were on sick leave. For those working, characteristic changes were described; a reduction in hours, rearrangement of work to reduce physical exertion and often considerable help from workmates. Many men who had previously worked competently had become worried about the quality of their work and this anxiety further impaired performance.

Disability (change in activity) for each man was significantly correlated with previous level of physical exertion ( $P < 0.01$ ). This finding was also evident in comparing manual and clerical workers but most striking was the markedly larger proportion of manual workers (nine out of twenty-one) as compared with clerical (two out of fifteen) who had had to change their jobs. The present information proved inadequate to evaluate fully the significance of previous job-satisfaction in relation to employment-record after angina, but this seems to be especially important in older men where early retirement is a practicable and socially respectable alternative. Another major factor is the employer's attitude and willingness to offer alternative part-time or lighter work. Men who have to find jobs with new employers are at a very considerable disadvantage, especially where their only experience has been of heavy manual work and at a time when there is a shortage of employment.

For leisure the characteristic features were reduction in exertion in the home and on leisure activities and narrowing of social contacts. This leads, in its most extreme, to an invalid life; sitting, sleeping, watching television and increased dependence on the family circle. As with work those men previously most active were most disabled after illness ( $P < 0.01$ ).

*Housing and financial problems.* There was no indication that any of the patients had received specialized assistance from social or employment services. Financial problems were common and serious in at least twelve families. Housing difficulties, for instance several flights of stairs, were a cause of considerable worry in at least six instances.

*Sexual intercourse.* Questioning revealed the high proportion of problems in the sexual relationship even before angina and in these families illness may, in this respect, have provided a welcome excuse. Previous frequency of intercourse: nil, fourteen patients; occasional, three patients; frequent, twenty-three patients.

Those men previously sexually active reported the following changes since illness: possible decrease, one patient; definite decrease, eight patients; ceased, thirteen patients; no change, four patients.

Apart from those men who suffered angina during intercourse there was considerable nervousness by patients and equally by wives as to the possible harmful effects of sex and few had used trinitrin to improve their performance. Several men spontaneously mentioned their sexual problems and a feeling of consequent loss of masculinity as being prominent amongst their complaints. In others the preoccupation with their predicament seemed to result in a loss of libido. Many men might have benefited from advice on the use of trinitrin and the least strenuous positions for intercourse.

*Family life.* In view of the severity of the physical and psychological disability it was not surprising that the disturbance of family life and relationships was said to be severe by 33% of patients and moderate by a further 37%. Relatives reported similar changes and commented on the extra physical demands and responsibility as well as limitations of their own lives. Disputes about their protectiveness and interpretations of medical advice were usual. A number of wives said they found the burden almost intolerable and almost all appeared to welcome the chance to express their feelings and to ask advice.

*Attitude to doctors.* Dissatisfaction with medical care, especially in hospitals, was rated as severe for 50% and mild in a further 25%. Complaints were made particularly about inadequate information and conflicting advice. While it was evident that some complaints were basically a projection of anxiety and it is well-known that patients' recall of medical advice is low, deficiencies in communication were clearly apparent. It is reasonable to suppose that improvement in the doctor-patient relationship would have implications for compliance with medical treatment and social outcome.

Relatives had lower expectations of medical care and were mostly satisfied. Half would have liked to have had more opportunity to discuss the nature of the illness and its outlook.

## Discussion

Little is known of the morbidity of ischaemic heart disease in the general population but the present results are comparable with those of hospital follow-up and rehabilitation-centre studies. There is little reason to doubt that the mechanisms discussed here are of wide significance even though the patients are likely to have been particularly disabled physically or psychologically.

The central themes of this paper are the wide impact of angina upon all aspects of family and social life and the use of quantitative ratings to demonstrate that physical limitation is but one of the determining variables. This is not unexpected, as the frightening nature of the symptoms and popular beliefs about heart disease mean that angina represents a threat to life and entails a fear of activity and stress. While feelings of loss of strength, masculinity and status predominate there may also be gains, the 'sick role' providing a legitimate retreat from personal difficulties. Relatives view illness similarly as a threat to life and with fear of activity and stress, and they also have to face the prospect of the extra demands upon them which result from the patient's physical and psychological state. It is inevitable that such family changes will cause an ambivalent mixture of concern and resentment, and like any other crisis, will become an important element in the

dynamics of family interaction with losses and gains for individual members.

The importance of psychosocial factors in determining adaptation to and coping with illness emphasizes the considerable significance of the doctor-patient relationship and of rehabilitation techniques. Wider understanding of the problems could lead to substantial improvements in psychological and social outcome.

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