

Psychological Reactions to Myocardial Infarction

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An authoritative report on cardiac rehabilitation (Working Party on Cardiac Rehabilitation, 1975) concludes 'although persistent invalidism may be due to cardiac damage, psychological or social problems are at least as important; fear, anxiety and depression as well as adverse extraneous influences should be anticipated not only in the patient but in his family and at his place of work and should be managed appropriately'. This implies that physicians are able to recognise and treat psychological and social difficulties. This article argues that, on the contrary, doctors have lacked adequate information to identify problems and to choose the right treatment for the right patient. Evidence from 100 first myocardial infarction patients is reviewed here to suggest that improved assessments and treatment is now possible.

Clinicians have been rightly sceptical about the validity and usefulness of most psychosomatic research based on arbitrary measures and analysis. However, psychiatric research offers reliable and satisfactory methods for mental state interviews and for rating psychological symptoms and measures of social adjustment.

Thus, in our study of 100 patients we used a semi-structured approach directed at obtaining precise descriptions of what the patient and his family are actually doing (chores, hobbies, work, etc.) and then using precisely defined rating scales (Brown, 1975).

The Nature of Disability

Previous accounts of disability have concentrated on narrow aspects of psychological state and return to work but we have shown that the effects on everyday life are much wider (Table 1). No characteristic pattern can be described in a single measure but rather for each patient each aspect of outcome is affected to a different extent, with some improvements reported as well as more frequent changes for the worse.

Mental State. At two months, and also a year after the infarction (Mayou *et al.*, 1979 a, b) a third of patients reported psychological symptoms of a severity comparable to those in psychiatric patients. Apart from anxiety and depression, complaints of irritability, poor concentration and tiredness were common and, apart from being distressing, often caused persistent difficulties in and out of the home.

Work and Leisure. While most patients returned to work within three to four months, some reduction in physical activity was common. This was also true for leisure (hobbies, domestic chores, social contacts) even though most patients had not led very active lives before the heart attack.

Family. At the time of admission, spouses were more distressed than the patients, and a year later they

Table 1. Psychological and Social Outcome Numbers and (%).

Time since infarct	Psychological Symptoms in					
	Mild	Patient Moderate	Severe	Mild	Spouse Moderate	Severe
Two months	43 (47)	21 (23)	28 (30)	28 (41)	23 (33)	18 (26)
One year	32 (37)	28 (32)	27 (31)	27 (42)	19 (30)	18 (28)
<i>Change in social activity and relationship at one year</i>						
	Increased	No Change	Slight decrease	Moderate decrease	Substantial decrease	
Work	6 (8)	21 (27)	26 (34)	13 (17)	11 (14)	
Leisure	9 (10)	22 (24)	32 (36)	24 (27)	3 (3)	
Social Contacts	12 (14)	45 (51)	25 (28)	6 (7)	0 (0)	
Sexual Activity	3 (4)	36 (47)	8 (10)	11 (14)	19 (25)	
	Improved	No change	Slight deterioration	Moderate deterioration	Substantial deterioration	
Marriage	19 (24)	44 (56)	9 (11)	6 (8)	1 (1)	
Family	14 (16)	58 (65)	10 (11)	7 (8)	0 (0)	

reported as many psychological symptoms and almost as many social changes for their own lives (Mayou *et al.*, 1978). Changes in relationships were also common and a quarter of couples reported that the experience of infarct had brought them permanently closer together. On the other hand, the effects on mental state and behaviour of husband and wife frequently increased marital stress. Sexual intercourse was substantially affected but only a fifth of patients and rather fewer spouses were in any way dissatisfied.

Compliance. Compliance with specific treatments and medication (apart from trinitrate) and with smoking advice (45 per cent of smokers stopped) was encouraging. However, patients had great difficulty with diets, and more general advice (which was often regarded as vague or conflicting) about activity had little impact.

(although 10 per cent were still attending ostensibly for cardiac reasons at one year). A substantial proportion (65 per cent) of patients continued to see their GP (not just collecting prescriptions) throughout the year. Continuing regular consultation was significantly ($p < 0.05$) related to the patient's anxiety and previous consultation habits and to doctors' usual practice, but not to the detection of medical or other complications or to special treatment programmes.

Detection of Psychosocial Difficulties. Few difficulties were detected in the hospital ward or outpatient clinic but family doctors were not surprisingly aware of a greater number. However, the GPs were over-optimistic compared with our ratings, under-estimating psychological symptoms and often being unaware of the limitations of everyday activity (Table 2).

Table 2. Leisure activity at one year: assessments by research team and GPs (%)

GP Rating	Research Rating				
	Increase	No change	Slight decrease	Moderate decrease	Substantial decrease
Back to normal	6	16	22	11	1
Not back to normal	0	4	6	7	2

The Course of Reactions

The results demonstrated that it is possible to make an accurate prognosis early in the illness since patients showed marked continuity of response throughout the year. In the minority in whom there were marked differences in the assessments at two and twelve months, explanations in terms of other major life stresses (for instance, a bereavement, moving house, or other illness) were usually obvious. Measures of state and of expectations at two months were highly predictive of outcome in the same aspects of psychosocial function at one year. It was notable that close relatives seemed to play a substantial part in determining patients' attitudes and reactions to illness. Many families were over-restrictive about physical exertion and we rated 35 per cent of spouses as consistently protective throughout the year.

Apart from the continuity during convalescence, there were significant correlations between pre-morbid adjustment and final outcome. Thus, mental state outcome was associated ($p < 0.05$) with mental state in hospital, history of previous psychological problems, and quality of marriage. Disability in any area of social life was related to previous adjustment, and expectations. Similar predictions of outcome were possible for spouses.

Medical Care

Advice. Patients and families' recollection of medical advice was often vague and unsatisfactory (Mayou *et al.*, 1976). Very few patients had any organised programme of care in which they were encouraged to increase their activities progressively. Some doctors appeared to have been excessively cautious as compared with the Working Party advice (1975).

Consultation. Most patients were discharged from hospital care after one or two outpatient appointments

Clinical Applications

Our results demonstrate substantial social and psychological disability for patients and spouses but suggest that while considerable resources were devoted to medical care there is scope for improvement in effectiveness and efficiency. The Working Party Report (1975) reviewed numerous sensible (but somewhat vague) suggestions but failed to indicate how to provide the right treatment most effectively for the right patient.

Assessment. It is possible to predict social outcome but, since disability cannot be described in a single index, more detailed clinical diagnosis is essential. A brief form of our interview (which can be seen as providing a more systematic basis for normal clinical procedure) would be acceptable to doctors and patients and would also provide more precise detail about the frequency and severity of any medical symptoms. Since patients tend to minimise their inactivity and their psychological symptoms (one-third of spouses described more distress than admitted by the patients), husbands and wives should both be seen.

Treatment. Demonstration that individual differences in attitude and behaviour are apparent from the earliest days and that some patients return to full life well within two months suggests that rehabilitation should be routine, beginning in hospital, and normally completed within six to eight weeks. Obvious essential ingredients are continuity, consistent precise advice, clearly written handouts, the involvement of close relatives, the opportunity for discussion and questions, and careful systematic assessment of the psychosocial and cardiac state. Less clear-cut is the frequency of attendance and the role of formal exercise testing, exercise training and attendance in groups. To answer these uncertainties it is essential that programmes are evaluated, using appropriate criteria for mental state, return to full activity, and for compliance with advice on medication, smoking

and diet. We are now undertaking such a project, comparing outcome at three months for patients allocated to normal medical care, to extra outpatient advice or to four weeks' attendance at an exercise group.

Cost Effectiveness

The Working Party Report (1975) was concerned that improved care would require substantial extra resources, but it is probable that they underestimated the resources already involved and overestimated the costs of rehabilitation. We have found that, in an area without organised rehabilitation, very substantial but widely dispersed skills and resources are already devoted to medical care, both in hospital and in general practice. The proposed treatment could probably be provided in a cardiac clinic at little net cost. Many patients make good progress without rehabilitation, and for them, one or two individual consultations and possibly attendance for a few sessions of exercise training would certainly be adequate, with only a small number requiring more prolonged or specialist care. Regular documentation of behaviour and of cardiac state would also enable more precise diagnosis of physical symptoms, more continuity in prescribing, and more rational selection for angiography and other investigations.

The use of psychological and social measures in evaluation of the benefits of treatment could and should be extended to issues other than rehabilitation; for instance, the role of home or hospital treatment. While the main benefits are obviously medical in terms of mortality or physiological function, such assessment will be valuable in ensuring the patients suffer a minimum of social disability.

Acknowledgements

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Insult Obscure

The art of insult has a long and varied history. In debate, in prose and in poetry the insults recorded go from the downright rude to the rapier thrust of sophisticated wit. Many insults have depended on the occasion as well as the personalities involved. When the Prince Regent made his entry as a guest and Beau Brummell said to the host 'Who is your fat friend?' the occasion was right, the insult obvious and the consequence to Brummell inevitable. But there are some remarks that created a furore yet now seem impossible to assess as insults. In 1561 Dr Hector Nones was told by the College that he was bound by statutory oath to take his doctorate which for years he had, either out of contempt or negligence, failed to do. The College proposed to exact an annual fine until he took the degree. Nones agreed to think it over and would give his answer before the Fellows. However, the *Annals* report, Dr Nones, owing to a disturbed mental state, gave vent to some reckless language against Dr Smith, Consiliarius. Such outbursts, considering the place where they occurred and the person against whom they were made, were unworthy and much more severe than any patient could bear; with the result that Smith was provoked to make retorts almost as harsh. This wrangling produced such an exchange of bitterness that all the Fellows were displeased. As a result of this fracas the College fined Nones 40 shillings for provoking the quarrel and Smith 10 shillings for being disagreeable, only through provocation. And the insult that caused all this? Nones called Smith the slave of Cicero's wife.

Corrigendum

Vol. 13, No. 1, pp 21 and 22, article on Chemotherapy of Pneumonias by R. J. White.

There is an error in the presentation of Table 2. Dr White wishes to emphasis that mycoplasma are sensitive to oxytetracycline and erythromycin but that Q fever and psittacosis are sensitive to oxytetracycline but are not sensitive to erythromycin.