Aspects of psychological and social morbidity in patients awaiting coronary artery bypass grafting

M J Underwood, R K Firmin, D Jehu

Abstract

Objectives—To assess anxiety, depression, and social adjustment in patients awaiting coronary artery bypass surgery.

Design—Patient completed questionnaire study.

Setting—Regional cardiothoracic centre.

Patients—109 questionnaires were sent to patients on the waiting list of two cardiothoracic surgeons. Sixty eight (62%) were returned and 15 (22%) of the respondents were women. There was no difference in the response rates for men (53/84) 63% and women (15/25) 60%.

Main outcome measures—Anxiety and depression were assessed by the hospital anxiety and depression (HAD) scale. Social functioning was assessed by several nine point rating scales on which patients indicated how their work, family relationships, social activities, private leisure activities, and home management were impaired. Patients also indicated the severity of their cardiac symptoms on a questionnaire based on the New York Heart Association classification for the assessment of the functional state of patients with heart disease.

Results—On the HAD scale 19 (28%) patients scored in the clinically significant range for anxiety. Time spent on the waiting list was positively and significantly related to anxiety (p=0.05). Thirty-two (47%) patients scored in the clinically significant range for depression. Time spent on the waiting list was positively and significantly related to depression (p=0.005). Positive and significant correlations were found between time spent on the waiting list and impairment of work (p<0.0001), family relationships (p<0.0001), private leisure activities (p<0.0001), and social activities (p=0.004). No correlation was found between any of the above variables and the indicated level of clinical symptoms.

Conclusions—This study documents previously unreported associations between the time patients wait for coronary artery surgery and levels of anxiety, depression, and social functioning. Conclusions regarding the causes of these symptoms cannot be made from this small population of patients but these results do suggest that these associations should be studied further.

Coronary artery bypass grafting has been shown to be an effective treatment for the relief of angina. It has also been shown to improve long-term survival in patients with left main stem disease and triple vessel disease particularly when left ventricular function is already impaired.1 Over 200,000 patients underwent coronary bypass grafting in the United States each year. In the United Kingdom, 9616 operations were performed in 1985, rising to 11,521 by 1988 (the United Kingdom cardiac surgical register 1988). The current national target is roughly 18,000 operations by 1991 (300 operations/million population/year). Unfortunately this figure relates to the medical knowledge of the 1980s rather than the 1990s and it has become clear that a figure of 450–600 operations/million population/year (27,000–36,000 operations) is a more realistic reflection of modern cardiological practice.2 This sudden increase in demand and associated decline in the mortality of the procedure3 will mean pressure on the waiting lists for both coronary arteriography and coronary artery surgery. Waiting for surgery has been reported as one of the main sources of stress for this group of patients and a period of intense psychological adjustment.4 Our study was designed to assess aspects of anxiety, depression, and social functioning in these patients.

Patients and methods

Patients awaiting routine coronary artery bypass grafting under the care of two consultants were sent a series of questionnaires designed to assess anxiety, depression, impairment of social functioning, and severity of cardiac symptoms.

There were 109 patients on the lists and 68 (62%) returned the questionnaires. Among these respondents 15 (22%) were women compared with eight (19%) of the non-respondents. The average age of the respondents was 61 years and that of the non-respondents 62 years. The time each patient had been waiting for surgery was taken from the time they had been accepted for surgery and placed on the waiting list until the day the questionnaires were posted. The average time on the waiting list was 6.4 (range 1.5–22.2) months for the respondents and 5.8 (range 2.1–20.2) months for the non-respondents.
Aspects of psychological and social morbidity in patients awaiting coronary artery bypass grafting

Anxiety and depression were assessed by the hospital anxiety and depression scale (HAD Scale). This 14 item self report questionnaire has two subscales, one indicating the likelihood of anxiety, the other depression. It is specifically designed to screen physically ill patients and does not require the presence of somatic symptoms to determine the likely presence of psychiatric disorder. Threshold scores of 8–10 on either subscale indicate that patients are more likely to be anxious or depressed and merit more rigorous assessment.

Social functioning was assessed by means of several nine point rating scales on which the patients were asked to indicate the extent to which their work, family relationships, social activities, private leisure activities, and home management were impaired: 0 = not at all, 2 = slightly, 4 = definitely, 6 = markedly, 8 = very severely).

The patients were also asked to indicate their present severity of clinical symptoms in a questionnaire based on the New York Heart Association (NYHA) classification for the assessment of the functional state of patients with heart disease. (Class I, no limitation of physical activity; class II, breathlessness on ordinary physical activity, for example, walking; class III, considerable limitation of physical activity—that is, breathlessness or angina while walking on the flat; class IV, breathlessness or angina experienced at rest.)

STATISTICAL ANALYSIS OF RESULTS
The complex $\chi^2$ test was used to determine the significance of the relation between NYHA class and levels of anxiety and depression. The directions and degrees of association between time on the waiting list and levels of anxiety, depression, and social functioning were determined by means of Spearman’s $\rho$ measure of correlation.

Results
ANXIETY
On the HAD scale 19 (28%) of patients scored in the clinically significant range for anxiety, 28 (41%) were in the borderline range and 21 (31%) had non-significant scores. Time on the waiting list was positively and significantly related to anxiety ($\rho = 0.200$, $n = 68$, $p = 0.05$). Because only one patient was in each of the NYHA classes I and IV it was not possible to relate these classes to anxiety levels but in patients in classes II or III, NYHA class was not related to anxiety ($\chi^2 = 1.747$, df = 2, $n = 66$, $p = 0.417$).

DEPRESSION
On the HAD scale 32 (47%) of patients scored in the clinically significant range for depression, 18 (26%) were in the borderline range, and 18 (26%) were at non-significant levels. Time on the waiting list was positively and significantly related to depression ($\rho = 0.313$, $n = 68$, $p = 0.005$). For the reason previously stated it was possible only to ascertain the relation between NYHA classes II and III and depression. This relation was non-significant ($\chi^2 = 1.736$, df = 2, $n = 66$, $p = 0.420$).

SOCIAL FUNCTIONING
The proportion of patients reporting definite, considerable, or very severe impairment on the rating scales for work was 83%, for social activities 75%, for private leisure activities 75%, for home management 65%, and for family relationships 63%.

Positive and significant related were found between time on the waiting list and impairment of work ($\rho = 0.576$, $n = 64$, $p \leq 0.0001$), family relationships ($\rho = 0.486$, $n = 68$, $p \leq 0.001$), private leisure activities ($\rho = 0.414$, $n = 68$, $p \leq 0.001$), and social activities ($\rho = 0.323$, $n = 68$, $p = 0.004$). Time on the waiting list was not significantly related to the impairment of home management ($\rho = 0.122$, $n = 68$, $p = 0.161$).

NYHA GRADING
The number and proportion of the respondents in each of the described classes was: I = 1 (1%), II = 18 (26%), II = 46 (70%), I = 1 (1%). No relation was found between the indicated level of clinical symptoms and time spent on the waiting list.

Discussion
The experience of undergoing any form of surgery can be profoundly disturbing. The anticipation may dominate the mental functioning of patients, some reacting both before and after the operation with serious psychiatric disorders unrelated to the severity of illness or the extent of surgery. The implications of coronary artery surgery are especially provocative since this procedure involves the manipulation of an organ that is still generally perceived as being the essence of life itself. Indeed, this attitude is one that has also affected the medical profession; thus Bilroth's much quoted statement that "any surgeon who would attempt an operation on the heart should lose the respect of his colleagues" was upheld by the profession for many years. The postoperative psychological effects of open heart surgery have been well documented but little work has been done to assess the effect on patients of the long waiting lists that exist in this country at present. Our study documents some of these features.

A large percentage of our patients (47%) scored significantly high levels for depression on the HAD scale. This scale is widely accepted as a means of differentiating those patients who are unhappy and demoralised on account of their illness or for some other reason, and those patients who are depressed in terms of a biogenic mood disturbance. The levels recorded in our study population were shown to be statistically related to the time patients had spent on the waiting list for surgery and scores such as these indicate that this group of patients certainly warrant further assessment and may benefit from antidepressant treatment. The incidence of depressive symptoms documented
and this meeting gives new patients the opportunity to discuss some of their initial fears and anxieties regarding the operation with people who can appreciate such emotions and who can answer questions relating to the impending operation with authority. The part played by these groups may need to be extended to help patients cope with the potentially detrimental effects that prolonged periods awaiting surgery can have. The medical profession can also play an important part in minimising the psychological and social consequences of awaiting operation, both in the hospital by greater communication with families as well as patients and also in the community by way of the general practitioner. The role of the general practitioner in the management of these patients is important and by regular contact he or she may not only be able to pick up levels of anxiety and depression but also mobilise resources to help patients cope with the enforced social consequences of awaiting an operation.

In this article we have reported new data on associations between awaiting coronary artery bypass surgery and levels of anxiety, depression, and social functioning. We accept that strong conclusions cannot be drawn from such a small sample of patients particularly in the absence of a control cohort but the associations we have shown raise important issues that merit consideration, and we would suggest that further study into this problem is required to assess the potential benefits of early surgery. Until this is achieved and more substantial information is acquired confirming our impressions, the management of these patients should not focus solely upon the disease process but should also consider the patient in a more holistic way while they await surgery.