

Predictive Value of Psychosocial Profiles Following Acute Myocardial Infarction

Kathleen Obier, ACSW, Margie MacPherson, BS, and L. Julian Haywood, MD, FACC, FACP

Los Angeles, California

Psychosocial profiles were done prospectively on 54 males and three females in addition to hemodynamic and non-invasive studies; the average age at admission was 44 years. The mean study time for 45 survivors was two years and three months and was seven months for 12 non-survivors. Thirty potential psychosocial problems were investigated during coronary care unit stay, and at three months, six months, and one year. Four problems previously shown to have prognostic significance were re-examined. Depression and pessimism occurred more frequently in non-survivors ($\alpha = .05$). Patients with maladaptive family relationships post-admission were more likely to die (66 percent), than those with adaptive relationships (15 percent) ($\alpha = .05$). Patients with poor social adaptation prior to admission had significantly more psychosocial problems during follow-up ($\alpha = .05$). However, this group had no more deaths than the total population. The type and number of psychosocial problems of survivors and non-survivors of acute myocardial infarction have predictive prognostic value.

Purpose

In recent years, efforts have been made to identify specific psychosocial factors that are significant in regard to morbidity and mortality during hospitalization in a coronary care unit and during recovery from acute myocardial infarction.¹⁻⁶ The results of these studies strongly suggest a significant correlation between social and emotional states, and level of patient recovery. Avenues for further intensive

and extensive examination have been delineated. The study reported here was undertaken to test previous findings in a young symptomatic population. Specifically, an attempt was made to determine which of many psychosocial factors had prognostic value in a potentially high-risk patient group and at what point in time these could be detected and treatment initiated.

Patients were seen very early in their coronary care unit stay and followed intensively for up to 2½ years. In addition to the study of psychosocial factors, hemodynamic and non-invasive cardiac studies were done on some patients and are being reported elsewhere.^{7,8}

Methods

Study Population

The study population consisted of 54 males and three females who had been admitted to the coronary care unit, at the Los Angeles County-University of Southern California Medical Center, for treatment of acute myocardial infarction.

The average age of the patients studied was 44 years with 21 percent under the age of 36, 74 percent under the age of 50, and 26 percent over the age of 50. Thirty-three (58 percent) of the patients were employed prior to admission and one female was an active housewife. Nineteen (58 percent of those employed) had been engaged in manual labor, with the remainder in professional, proprietary, or clerical capacities. One patient had been retired, nine (16 percent) were previously disabled, and 13 (23 percent) were unemployed.

Twenty-seven (47 percent) patients were married at the time of admission, 12 (21 percent) were divorced, 11 (19 percent) were unmarried, one was widowed, and six (10.5 percent) were separated. Less than ten percent of the patients had an income of over \$10,000 annually.

Study Method

The study method employed was observational and exploratory. The mean study time for 45 survivors was

Requests for reprints should be addressed to Dr. L. Julian Haywood, 1200 North State Street, Box 305, Los Angeles, Calif 90033.

two years and three months, and for 12 non-survivors was seven months. Thirty potential psychosocial problem areas were reviewed by the medical social worker with each patient and, where possible, with family members. Problem areas covered a broad range of specific emotional states such as depression, anxiety, fear, hostility, denial, and specific areas in social functioning such as family relationships, economic, and employment problems. Factors found to have prognostic significance in a patient population composed of consecutive coronary care unit admissions were closely re-examined in the study group under discussion.⁶

The primary source of data was direct interviews with patients and family members by the social worker, and in behavioral observation by the professional staff of the coronary care unit. Data gathered were formally recorded on a standard information protocol during coronary care unit stay, and at intervals of six weeks, three months, six months, and one year. All patients and their families were offered routine services by the social work staff throughout the study. Due to the nature of the group, namely, its relative youth and the high incidence of physical and emotional symptomatology, a large number of the patients required intensive and extensive social work services. A medical center staff psychiatrist provided consultation and clinical intervention when necessary.

In addition to the recording of problems, the disposition of the patient was recorded at the specified time intervals.

Results

The results documented by the study are reported at the end of one year, and up to 2½ years post-admission to the coronary care unit. As previously stated, at the end of the study period, 12 of the patients had expired, 45 survived, and none had been lost to follow-up. For the purpose of analysis, the total population is grouped into surviving and non-surviving patients. At six months post-admission, 29 (65 percent) of the

| Table 1. Psychosocial Problems | | | | |
|---|-----|----------|----------|--------|
| | CCU | 3 months | 6 months | 1 year |
| Depression | | | | |
| Survivors | 20% | 12% | 9% | 9% |
| Non-survivors | 42% | 64% | 64% | 60% |
| Significance ($\alpha = .05$) | No | Yes | Yes | Yes |
| Pessimism | | | | |
| Survivors | 9% | 7% | 4% | 4% |
| Non-survivors | 17% | 45% | 45% | 40% |
| Significance ($\alpha = .05$) | No | Yes | Yes | Yes |
| Perception of Disability | | | | |
| Survivors | | 65% | 65% | 65% |
| Non-survivors | | 82% | 64% | 100% |
| Significance ($\alpha = .05$) | | No | No | Yes |
| Average Number of Patient Problems | | | | |
| Survivors | 2.8 | 1.3 | 1.0 | .7 |
| Non-survivors | 4.1 | 2.8 | 3.0 | 3.4 |
| Significance ($\alpha = .05$) | No | Yes | Yes | Yes |

survivors were disabled, while 10 (83 percent) of the non-survivors were disabled; these figures remained the same at the end of one year. At six months, 12 of the survivors had returned to previous or new employment; one non-survivor was working. At the end of one year, only ten of the survivors and the one non-survivor continued to be employed. The major findings of this study (Table 1) are as follows:

1. Four of the previously studied problems proved to have predictive prognostic value in relation to mortality. Significantly, more of the non-survivor group continued to manifest depression after leaving the coronary care unit than those of the survivor group. Similarly, the non-survivor group were notably far more pessi-

mistic than the survivor group. The former group rarely talked of the future and few engaged in future-oriented problem solving tasks such as accepting vocational rehabilitation or marital counseling. The one exception to this statement died of a cerebrovascular accident (CVA) 2½ years post admission. The non-survivor group clung to past lifestyles and coping responses, eg, attempting to continue plans for unrealistic employment after intensive coronary care unit staff efforts to correct misconceptions and to encourage use of alternative resources. A third prognostic factor in the non-survivor group was found in the area of family relationships. The incidence of family breakdown or the formation of maladaptive relationships was much higher in the non-survivor group.

Finally, the non-survivor group experienced more total psychosocial problems than the survivor group.

2. The significant prognostic factors could be delineated at different times following coronary care unit stay, however, all were readily detectable by three months post-admission. It is interesting to note that, in this patient population, it was not possible to differentiate the groups during coronary care unit stay, while in our previous study a significant difference was found at that time. It can be speculated that the initial event of sudden hospitalization for severe illness is commonly experienced in a population more homogenous in age and physical parameters.

3. Demographic factors such as age, employment, and marital status were reviewed and found not to be significant between the two groups.

4. Patients who had clearly reported severe problems in social functioning prior to admission, such as alcoholism, had significantly more psychosocial problems during follow-up. It is important to note, however, that this group had no more deaths than the total population.

5. One factor previously found to be significant, namely, whether the patient perceived of himself as disabled or merely handicapped, was not statistically significant in this study. The high percentage of disability within the total study population may account for this fact.

6. Although no specific attempt was made to include the physical findings gathered as additional variables in this study, these are being reported elsewhere. A general statement can be made that the population studied presented a high degree of symptomatology associated with a combination of physical, social, and emotional disability.

Discussion

This study clearly documents the prognostic value of specific psychosocial factors following acute myocardial infarction. Careful and skilled assessment of the patient's psychosocial functioning immediately following coronary care unit stay and throughout early convalescence can result in accurate identification and diagnosis of relevant problems. It, therefore, becomes necessary to integrate the capacity for such evaluation

within the total medical care delivery system. As the responsible leader of the treatment team, the physician must heighten his own awareness of these issues and should have mental health specialists readily accessible to assist him in both diagnosis and treatment.

The study also clearly poses a challenge to the primary physician, and to social workers, psychologists, and psychiatrists, to explore and develop innovative treatment measures compatible with accepted physiological treatment of myocardial infarction. The goal of such efforts should be to reduce the use of maladaptive, cognitive, affective, and behavioral coping responses and to enhance and support adaptive family relationships. Hackett et al have suggested one possible treatment focus, namely, the use of activity as a modifier of poor psychological adaptation.⁹ Another approach may be to provide anti-depression programs for patients requiring such specialized care. It is the opinion of these authors that the earliest possible recognition of the problems and the immediate initiation of appropriate psychosocial therapeutic intervention is essential to optimal patient care. The importance of skilled supportive care and initial assessment in the coronary care unit is unquestioned, but the study underlines the necessity for equally skilled follow-up after release.

It is beyond the scope of this study to project causal relationships in a multi-faceted problem such as myocardial infarction. However, because much about the disease process remains unknown, all factors which can be recognized and measured, demand further study and appropriate intervention. In looking very closely at the non-survivor group, the authors noted that all but one of the patients expressed their depression, hopelessness, and problems in family relationships, in response to their perception of a symbolic or real loss (eg, loss of business and its role relationships, loss of pre-morbid self-image as a potent male, etc). The real experiences of the surviving group were similar; therefore, the study of individual strengths, of ability to accept loss appropriately, and then move on to adaptation and restitution may provide valuable information to the development of successful treatment measures.

Summary

Fifty-seven patients who were treated in a coronary care unit for acute myocardial infarction, and subsequently followed on an outpatient basis were studied to determine the prognostic value of psychosocial factors. The average age was 44 years and all patients were of lower socioeconomic status. Depression, pessimism, psychosocial problems, and maladaptive family relationships were significantly more frequent among the 12 non-survivors. Delineation of the problems could be made by the end of three months post-admission. The study strongly indicates the need for innovative and specialized psychosocial treatment programs.

Acknowledgement

Supported in part by Research Grant #HMS00106 from the National Institutes of Health, Public Health Service.

We are indebted to Mr. Steven Saltzberg for statistical analysis and Dr. William F. Kiely, Associate Professor of Psychiatry, University of Southern California, School of Medicine, for advice and council during the course of this study.

References

1. Hackett TP, Cassem NH, Wishnie HA: The coronary care unit: An appraisal of its psychological hazards. *N Engl J Med* 279:1365-1370, 1968
2. Hackett TP, Cassem NH, Wishnie H: Detection and treatment of anxiety in CCU. *Am Heart J* 78:727-730, 1969
3. Gentry WD, Foster S, Harvey T: Denial as a determinant of anxiety and perceived health status in the coronary care unit. *Psychosom Med* 34:39-44, 1972
4. Wishnie, H, Hackett TP, Cassem N: Psychological hazards of convalescence following myocardial infarction. *JAMA* 215:1292-1296, 1971
5. Wolf S: Psychological forces in myocardial infarction and sudden death. *Circulation* 74:39-40, 1969
6. Obier K, Haywood LJ: Psychosocial problems of coronary care unit patients. *J Natl Med Assoc* 63:425-428, 1971
7. Khan AH, Barndt, R, Haywood J, et al: Estimation of left ventricular dysfunction by 'A' wave of apexcardiogram. *Clin Res* 20:172-175, 1972
8. Khan AH, Haywood LJ, Barndt R, et al: Apexcardiogram estimation of left ventricular compliance. *J Assoc Advance Med Instrument*, 1973
9. Cassem NH, Hackett TP: Psychological rehabilitation of myocardial infarction patients in the acute phase. *Heart Lung* 2:382-388, 1973