

Psychosocial aspects of cardiovascular disease

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ABSTRACT

In addition to controlling hypertension, hyperlipidaemia, obesity, and stopping smoking, physicians should consider the powerful effect that psychosocial factors have, not only on the cause of cardiovascular disease, but also on morbidity and mortality.

Ornish et al developed a lifestyle management programme which when followed in addition to diet and exercise caused reversal of coronary stenosis. Animal studies show that stress is a factor in development of coronary blockage and patients who have no social support are at a greater risk of developing heart disease.

Many patients suffer anxiety and depression following a myocardial infarction and psychotherapy can improve convalescent time.

Physicians can set a good example of healthful behaviour; help to modify beliefs underlying self-destructive behaviour; bring in family members to help assist patients to change; begin psychotherapy while the patient is still in the coronary care unit; teach patients breathing exercises and relaxation techniques.

Working with those small numbers of patients who are willing to make lifestyle changes can have a dramatic effect on their illness and allows us to view our patients in a more comprehensive way.

RESEARCH

It is extremely important that, in addition to controlling hypertension, hyperlipidaemia, obesity, and stopping smoking we consider the powerful effect that psychosocial factors have, not only on the cause of cardiovascular disease, but also on morbidity and mortality.

Ornish et al (1,2) showed that patients on a 10 per cent low cholesterol, low fat vegetarian diet, in addition to moderate aerobic exercise and stress management programme, had a significant reversal of coronary artery stenosis in one year compared to a control.

Eighty two per cent of the experimental patients showed a reversal overall, with the average stenosis reduced 61 to 55 per cent while the control group progressed on average 9 to 16 per cent.

Dr Ornish stressed that a multifactorial approach is important. Although you can change behaviour, unless you deal with the underlying psychological mind set, then Dr Ornish felt few long term changes would take place.

His stress management programme included progressive deep relaxation based on the Jacobson method, breathing techniques, guided visualisation, yoga, meditation and group meetings twice a week. All were part of the lifestyle management programme that complemented diet and exercise.

He believed that if you only treat the physical problems, they will recur unless you get at the underlying emotional stress, the perceived isolation, the lack of social support, the cynicism, hostility, and low self-esteem of coronary vascular disease patients.

He felt that a patient's sense of isolation; that is, isolation from others, from themselves, their own feelings and their own sense of inner

desire, fatigue and tiredness were predictive of precursors to coronary vascular disease and sleep problems.

Feelings of exhaustion were predictive of future myocardial infarction after controlling for blood pressure, smoking, cholesterol, age and use of hypertensive medication (20). The Normative Aging Study in Boston enrolled 2271 since 1961 who completed a five item scale to assess anxiety symptoms. During 32 years of follow-up men with two or more anxiety symptoms had an adjusted odds ratio of 1.9 for fatal coronary disease and 4.5 for sudden death as compared to men who had no anxiety symptoms (21).

Psychological factors after a myocardial infarction

Anxiety and depression are very common in patients with recent MIs.

Forty to 65 per cent of patients with a recent MI showed signs of depression (22). In a study by Wynn, half the post MI patients were found to be suffering unwarranted emotional distress considerably in excess of that due to the unavoidable consequences of their disease.

Much of the anxiety and disease was not diagnosed by primary care physicians (23).

Those who experienced moderate to high depression had a slower return to work, had more social problems and more stressful life events after MI (24). There was an increased morbidity and mortality for the first year following MI (25) and they suffered increased major cardiac events within a year of cardiac surgery independent of their cardiac status and general medical states (26).

Post-MI patients, who got psychotherapy to facilitate coping and to unearth psychological resources and hidden strengths an hour a day during their time in hospital, had decreased hospital stays, less days in the ICU, decreased physician-reported depression and increased return to normal activity four months later than controls (27).

Lloyd and Cawley suggest that patients with psychiatric psychopathology before the MI need to have their psychopathology addressed after the event more intensely, as compared to those with no psychiatric complaints before the infarction (28).

Those patients who were most using denial about their MI, which is common in most MI patients, suffered less anxiety in CCU and had shorter stays and fewer cardiac dysfunctions during the acute stage. But in the year after discharge, the strong deniers were less com-

pliant and had more increased days of rehospitalisation (29).

Supportive psychotherapy decreased convalescent time (30), and women who have increasing anxiety and depression following an MI had much longer convalescence and a much slower return to work than matched controls.

Some of these studies suggest by modifying behaviour and psychosocial risk factors, we can reverse atherosclerosis and decrease morbidity and mortality.

Primary care physicians are commonly faced with psychosocial aspects of cardiovascular disease, especially when patients have suffered cardiovascular accidents and are discharged from hospital to our care. Focusing more attention on those aspects are crucial.

Considerations with respect to treatment

Most physicians try to motivate patients who need lifestyle changes, and yet find tremendous resistance when attempting to get them to make changes. What can be done to encourage changes in motivation and compliance?

When motivating patients remember "physician heal thyself", and "practice what you preach".

The more physicians are following their own recommendations, the more likely that patients are going to follow their advice, eg, if you are a smoker or overweight, then it is more difficult to convince your patients to stop smoking and change their eating habits.

If a physician is drinking excess coffee and running around in the office, "like a chicken with its head cut off", it will be more difficult to encourage patients to make lifestyle changes (31).

Very often it is important to deal with beliefs and attitudes underlying any maladaptive and self-destructive behaviours. Helping patients re-evaluate those belief systems and instituting new self-enhancing and affirmative ways of seeing the world helps patients develop different priorities and models of self support.

There is a window of opportunity during a crisis, when they are in pain or have suffered a threat to their life, when patients are more motivated to change.

Working with those patients who are most willing to change and following those patients who are more hesitant helps to reduce physician stress and resentment of patients who are not going to follow your good advice. Counselling or psychotherapy should be instituted on the first or second day after admission into the hospital. The intention is not to overbur-

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peace, and isolation from a higher force like God or a higher spiritual being, was the basis of the psychological component of cardiovascular disease.

Intimacy and connecting with people were very important factors that needed to be considered when treating patients with cardiovascular disease (3).

Rosenman and Friedman (4,5) showed that patients exhibiting type A behaviour, characterised by enhanced aggressiveness, competitive drive, self-involvement, preoccupation with deadlines, chronic impatience and time urgency, had twice the risk of developing cardiovascular disease as type B, more laid back patients.

They found that by altering type A behaviour and working with hostility and impatience as two very important risk factors there was a 45 per cent reduction in cardiac incident recurrence of type A patients who were counselled, as compared to a control of non-counselled post-infarction participants (6,7).

Friedman felt that a sense of low self-esteem and insecurity were the two important factors which fuelled type A behaviour and that therapy needs to focus on reversing a low sense of security and self-esteem (8).

It also became clear that this is not a short term work but that, if there is to be more continual and ongoing changes, counselling needed to continue, perhaps for many years until significant changes in personalities could be found.

Many studies in animals show that coronary artery disease is aggravated by stress. Kaplan et al (9) found that, when monkeys were selected on the basis of their dominant, highly aggressive nature and these monkeys were kept in a stressed and socially disruptive, unstable environment, they developed coronary blockage much more significantly than dominant monkeys who were kept in a non-stress environment, even when they were fed a low fat diet.

The hot reactors, or monkeys that behaved as the most dominant, had the highest rate of coronary blockage. Other factors, like blood pressure, high cholesterol, glucose levels and ponderosity, were all controlled in these situations.

Dr Robert Nerem et al (10) examined the positive effects of positively changing the social environment. They found that there was a 60 per cent reduction in atherosclerosis, in a group of rabbits that were played with, petted, held

and talked to as compared to a control group who were not, even though they were fed the same diet, had comparable blood pressure, cholesterol and heart rates.

Social support

There are many articles which discuss how psychosocial factors can have a marked effect on cardiovascular disease (11,12,13).

Blazer (14) found that in 331 elderly subjects the risk of mortality over a 30 month period was much greater if no social support systems existed when all other factors were taken into consideration.

People who live alone have more cardiovascular disease than those living with a person or a pet. The quality of social support was important, and the more that people felt loved and supported, the less coronary artery atherosclerosis was present independent of all other risk factors.

Being married decreased the mortality after an MI (15), and those with supportive wives were found to be more compliant with medical regimes (16).

Two thousand, seven hundred and fifty four people were interviewed and followed for the next nine to 12 years (17). Those people who had higher level of social relationships and activities were less likely to die during the next nine to 12 years.

Men who did no volunteer work were two and a half times as likely to die during the study as men who volunteered at least once a week, independent of age, gender or health status.

There is a lot of information about mental precursors and its effect on cardiovascular risk factors.

Crisp et al (18) in a five year prospective observation study found that individuals who were obsessional, greater worriers and in the year before infarction displayed high levels of sadness, loss of libido, anxiety and fatigue were much more likely to have an myocardial infarction than those who did not exhibit those mental precursors.

Appels and Mulder (19) studied 3877 males in Rotterdam using a Maastricht questionnaire and found that 24 out of 57 questions were predictive for MIs when adjusted for age. The strongest precursors were in those questions which the patient answered indicating they were not accomplishing much, were easily irritated, and shrinking from work. The strongest precursor was if they answered that they wanted to be dead.

Sad, apathetic mood, loss of sleep and sexual

Intimacy and connecting with people are very important factors to consider when treating patients with cardiovascular disease.

den or scare the post-MI patient but to provide a forum for discussion and exploration of the patient's fears and concerns.

This could take the form of showing genuine interest; reassurance that anxiety and depression are common after an MI; examining any misinformation or unacceptable emotional reactions; exploring realistic fears and offering encouragement and positive feedback about the patient's internal resources and self-support (27).

Bringing in spouses and other family members into the office to help with discussing the reaction to cardiovascular disease or with changing potential risk factors is often very helpful (14).

Explaining physiology, how stress affects the autonomic nervous system, how relaxation exercises and breathing may alter autonomic function and the cardiovascular system response helps to bring the disease process more clearly into patient's awareness. Teaching patients relaxation exercises, breathing exercises, positive visualisations are easy things that can be done in the office and help to teach

patients new learnable skills that they can apply in their day to day life, which adds confidence and increases security (32).

Patients need to be educated about the fact that what they do makes a difference and reviewing studies that show lifestyle changes reduce morbidity helps them see that. They need to feel that they are the source of power and that there is a powerful source in the core within that they can access to make changes.

There is only a small number of patients who are able to change their cardiovascular risk factors; however, helping those small numbers can have dramatic effects on their morbidity and mortality.

Working with those patients can be quite a rewarding experience.

Addressing the psychosocial aspects of cardiovascular disease allows us to view our patients in a more comprehensive way and improves the quality of care provided.

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