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Cancer and the mind: Separating fact from fiction

A mind-body connection is unfounded, but motivated patients may fare better

WHEN PATIENTS AND THEIR FAMILIES are confronted with a diagnosis of cancer, they often ask their physicians questions that have no easy answers. Their world has turned upside down, and their questions—"Why me? What did I do wrong? Was it my diet?"—reflect their anger, doubt, and guilt.

One of the most intriguing and complex questions commonly asked by patients is about the possible relationship between their "state of mind" and the cancer: "Was it stress (...or my husband's recent illness, or my negative attitude) that caused the cancer?" Often the patient asks the corollary question: "Will improving my attitude help me to survive?"

In recent years, the role of the mind in the etiology and prognosis of malignant disease has been the topic of numerous books, magazine articles, television programs, and radio talk shows.[1] A number of "experts," including several physicians, have become national celebrities because of their views on the relationship between higher brain function and serious disease, including cancer.[2,3] Their message: the mind can cause cancer, and the mind can cure it.

The appeal of this reasoning is understandable. When a person contracts a serious disease, human nature demands an explanation for it. A problem may be easier to deal with if the cause is known; unfortunately, the reason why any individual contracts cancer may be totally unknown. Also, an explanation, no matter how scientifically implausible, can help a patient develop a personal plan to fight the disease and assume control of his or her medical future.

LACK OF OBJECTIVE DATA

Although self-help gurus have made many claims and strong recommendations for correct patient attitudes and conduct in the face of cancer, remarkably limited objective data exist to support any of their recommendations.

In general, the belief that higher brain function can influence the development of cancer or alter its natural course is seriously flawed, because it is based on the assumption that the coexistence of features establishes a direct cause-and-effect relationship.

For example, it is extremely common for undiagnosed cancer to cause loss of appetite, weight loss, and poorly localized pain. These symptoms can lead to considerable emotional distress, particularly if they develop over a prolonged time before the correct diagnosis is established. However, emotional distress is the *consequence* of the cancer, not the cause.

CAN THE MIND AFFECT THE IMMUNE SYSTEM?

Reports have noted changes in the immunologic profile of persons with cancer and other serious diseases. Studies have shown that certain immunological functions can be influenced by the emotional state and various psychological features. In fact, a large number of nonspecific factors, including stress, can alter corticosteroid secretion and affect a variety of immune cell types and functions.

Some have suggested that these alterations in immune function might decrease the immune surveillance necessary to prevent cancer. Further, they state that if patients alter

the psychological factors that caused these immune changes, the body would be able to successfully fight the cancer.

Unfortunately, these simple and superficially appealing explanations are not supported by the available data. There is no reliable evidence that any of these subtle alterations in immunological status, which occur regularly in all of us, either cause cancer or promote the progression of the disease. Rather, the changes in immune factors are almost certainly the direct result of the cancer itself or of a variety of associated conditions, both acute (eg, infection) and chronic (eg, severe weight loss due to cachexia).

A PROVOCATIVE STUDY

Is there any evidence of a relationship between the mind and the etiology and prognosis of cancer? Although there is no definitive answer, the question may be clinically relevant.

Perhaps the most prominent study giving scientific credence to this hypothesis was initiated 2 decades ago.[4] Patients with advanced breast cancer were randomly assigned to an experimental group that received intensive group counseling, or a control group that did not receive any specific psychological support. Ten years later, significantly more patients in the group that received psychological intervention were still alive, compared with the control group.

Encourage patients to get emotional support and not blame themselves

However, this study had two serious deficiencies. First, the study was small with only 86 patients: 50 in the experimental group and 36 in the control group. Second, the two groups may not have been comparable to begin with, because the study did not control for the cancer stage or location or total volume of disease, therapeutic interventions (eg, chemotherapy administered, dose schedule, second-line treatments), or comorbid medical conditions (eg, history of serious cardiac dysfunction) at the time of study entry.[5]

Thus, while of interest, the data from this highly publicized but inadequately designed study do not definitively establish any impact of psychological intervention on survival in advanced cancer. However, these provocative results should lead to further investigation of this issue in properly designed trials.

HOW PSYCHOLOGY CAN AFFECT OUTCOME

Despite the problems with this and other clinical studies of this topic, it is reasonable to speculate how a patient's psychological response to cancer may positively or negatively influence the course of illness.

Even highly effective cancer therapy can cause considerable short-term morbidity, particularly in patients in a debilitated state when therapy is initiated. Psychological factors, or the attitude with which a patient confronts the treatment, can significantly influence the patient's response to side effects and hence, the therapeutic outcome.

For example, the optimal treatment for a number of types of cancer consists of a combination of local radiation and intensive systemic chemotherapy. The local toxicity of these treatments can be considerable. In the head and neck, radiation therapy can lead to local pain, severe mucositis, difficulty swallowing solids or liquids, weight loss, and dehydration. Patients with a positive attitude, who refuse to give up, convince themselves they will not allow the rigors of treatment to prevent its completion. Such patients do all in their power to take necessary liquids and nutritional supplements, and take all precautions to prevent infection to denuded areas of skin.

Highly motivated patients are also more likely to make necessary lifestyle changes, such as giving up smoking and moderating their alcohol intake. They take their medications as directed, and they keep their appointments. They are active, not passive, participants in their treatment.

In contrast, patients who have a passive attitude toward their illness may fail to follow their physicians' instructions, and may not alter negative habits. Also, they may ignore important advice, such as informing their physician of fever developing at a time of suspected neutrophil nadir following a course of intensive chemotherapy.

Clinical data support the hypothesis that patient motivation and behavior can affect the clinical course in cancer. In a randomized controlled trial examining prophylactic oral antibiotics in patients with cancer, the incidence of fever or infection was 13% in patients who received placebo but who

adhered well to the treatment program, compared with a 44% rate in patients receiving placebo who adhered poorly to the program ($P < .005$).[6] Although this finding might have occurred by chance (as is true in all randomized trials), another plausible explanation is that factors associated with adherence to the treatment regimen were responsible for the favorable outcome, such as increased hand washing and avoidance of crowds.

Just as these behavioral modifications may have greatly reduced the incidence of fever and infection in this study, it is conceivable that cancer patients who have a positive attitude toward treatment and a strong desire to overcome their disease may make conscious or unconscious changes in behavior and lifestyle which can enhance both quality of life and survival.

WHAT TO TELL PATIENTS ABOUT THEIR EMOTIONS AND CANCER

What should we tell patients newly diagnosed with cancer? If they ask your opinion regarding the value of positive thinking, or the importance of faith, prayer, cancer support groups, and family support, it is quite appropriate to encourage them, or at least to not discourage them. However, I emphasize that they should not blame themselves or their emotions for causing the cancer to begin with.

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