Realistic goals of cancer therapy: effective and humane care

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■ **BACKGROUND** Cure is the ultimate goal of antineoplastic therapy, but currently available treatment falls short of this goal in many situations.

■ **OBJECTIVE** To present the general aims of antineoplastic treatment and to discuss specific examples.

■ **SUMMARY** The choice of therapy is influenced by the type of cancer, the extent to which it has spread, the effectiveness and toxicity of available therapy, the patient's performance status, the presence of symptoms, and the patient's preference. Goals of therapy include cure, prolongation of survival, improvement in quality of life, palliation of symptoms, and prevention of complications.

■ **CONCLUSIONS** Establishing the goals of therapy for a patient with cancer is an individualized process. Stopping to consider what one is trying to accomplish can help the physician give effective and humane care.

■ INDEX TERMS: CANCER THERAPY; INFORMED CONSENT; GOALS OF TREATMENT
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ALTHOUGH CURE is the ultimate aim of treatment of malignant diseases, currently available anticancer treatments frequently fall far short of this goal in many clinical settings. This article reviews the general aims of antineoplastic treatment and discusses specific examples to place theoretical principles of treatment in the context of clinical practice.

REALISTIC GOALS

One must establish realistic treatment goals for individual patients with cancer. These goals frequently change during the course of a patient's illness. Without a realistic assessment of what therapy can and cannot achieve in a particular tumor type at a specific stage in a given patient, one might employ inappropriate and potentially harmful treatment strategies.

Physicians caring for patients with malignant diseases must constantly weigh the risks and benefits of particular treatment strategies. Although the decision-making process does not and cannot rely on a precise mathematical formula, clearly, an objective assessment of

the known and unknown risks of treatment vs the anticipated or hoped-for benefits of the proposed therapy must be a critical component of the informed consent process.

Frequently, the first question a patient asks when the diagnosis of a malignant disease is confirmed is, "Doctor, can my cancer be cured?" This can be one of the most difficult questions for any physician to answer. Of course we want to say yes, but the honest answer for individuals with advanced cancer is often no, or "I do not know."

Does honesty matter when answering this question? If one answers yes when the medical answer is no, is any harm done? Certainly a yes will provide hope to a patient with malignant disease. However, it is the physician's responsibility to provide more than hope. In some diseases, the therapeutic approach may be vastly different depending on whether cure or palliation is the goal of treatment.

COMMON CLINICAL SITUATIONS

Several examples of common clinical situations will provide a focus for a discussion of how to define realistic and humane goals of antineoplastic therapy.

Prolonging survival, improving quality of life

A 65-year-old man with a long history of smoking presents with blood-streaked sputum and shortness of breath. A chest roentgenogram reveals a 2-cm peripheral nodule in the right lung. The patient has a good performance status and is considered an acceptable candidate for surgery. Preoperative evaluation reveals three metastatic lesions in the right lobe of the liver, another in the left lobe, and a solitary metastatic mass in the left frontal lobe of the brain. There is no other evidence of metastatic cancer.

Is it possible to cure this patient? Certainly, metastatic cancer can be surgically resected from a variety of locations. However, although the feasibility of successfully and safely carrying out a procedure is a *necessary* requirement for its performance, it should never be considered *sufficient justification*. No data suggest that the surgical resection of multiple metastatic lesions will prolong survival or improve quality of life for an individual with advanced lung cancer. What must be asked in this and similar clinical settings is, "What impact will the procedure or treatment have on survival or quality of life?"

TABLE 1
FACTORS IN CHOOSING THERAPY FOR A PATIENT WITH CANCER

Type of cancer
Extent of spread
Effectiveness and toxicity of available therapy
Patient's performance status
Presence of symptoms
Patient's preference

Several factors should influence the choice of therapy for a patient with metastatic cancer (*Table 1*). These factors are not listed in order of importance, as they all must be considered in defining the general treatment strategies for patients with a particular type of cancer, and for individual patients within that group.

For example, for patients with metastatic non-small cell lung cancer, data from clinical trials indicate that systemic chemotherapy can enhance quality of life and prolong survival.[1,2] However, if a patient also has severe congestive heart failure or chronic obstructive pulmonary disease (ie, has significant comorbid medical conditions), or is cachectic (ie, has a poor performance status), the anticipated toxicity of treatment might outweigh the limited potential benefit.[3]

Conversely, if a patient with advanced cancer has a good performance status (ie, is able to carry on essentially normal daily activities), one might conclude that the side effects of treatment would be less severe or at least better tolerated, and the risk-to-benefit ratio would shift in favor of treatment. In patients with the same type of cancer and objective evidence of disease in the same anatomic locations, the decision whether to give systemic chemotherapy would be based on the perceived potential toxicity in the *individual* patient vs what the patient may hope to benefit from a palliative treatment regimen. In this discussion, patient preference must always play a critical role. The physician must present the pros and cons of a particular treatment strategy and allow the patient, with the help of family and friends, to decide if the expected benefits outweigh the side effects and reduced quality of life associated with systemic antineoplastic therapy.

Obtaining a cure

A 20-year-old woman is discovered to have a mass on pelvic examination. At laparotomy a germ-cell tumor (non-dysgerminoma) of the ovary is discovered that has spread to the omentum. The tumor can be completely resected.

In this setting, data overwhelmingly prove that adjuvant systemic chemotherapy is associated with an extremely high cure rate—greater than 95%.[4] Without chemotherapy, the risk of relapse and ultimate death is great. Thus, the decision to recommend chemotherapy is not difficult, with the risk-to-benefit ratio highly in favor of treatment. If a patient refuses therapy because of an extreme and inappropriate fear of side effects, the physician should do everything in his or her power to work through this difficulty (eg, discussions with family, clergy), because delaying treatment until symptoms of recurrent disease are evident will significantly compromise the patient's chances of long-term survival and cure.

Obtaining long-term disease-free survival or cure

A 56-year-old woman presents with abdominal pain. On further evaluation she is found to have a large pelvic mass and ascites. Laparotomy reveals stage III epithelial ovarian cancer that can be "optimally debulked" (ie, the largest remaining residual tumor nodule is < 1 cm in maximal diameter).

Approximately 70% to 80% of patients with epithelial ovarian cancer who undergo chemotherapy have objective evidence of tumor regression and improvement of symptoms (if any symptoms are present when systemic treatment is started). Unfortunately, only 15% to 30% of patients with advanced disease will ultimately experience long-term disease-free survival (> 5 years).[5,6]

Thus, chemotherapy in this setting has three major justifications. First, it can prolong survival and the time to development of symptoms. Second, it can alleviate symptoms such as pain, ascites formation, and weight loss.

Finally, such treatment may be associated with long-term disease-free survival and "cure," although fewer than one third of treated patients achieve this goal. However, in this setting it is certainly appropriate to inform the patient that long-term disease-free survival is a realistic aim of treatment. Whether this goal is attained will become evident with time.

Preventing complications, palliating symptoms

A 62-year-old man has metastatic prostate cancer that has recently failed to respond to hormonal therapy and chemotherapy. However, he continues to have a good performance status, and his only complaint is pain, which has recently increased in several bony areas, most prominently in the left femur. Radiographic evaluation reveals an impending fracture of the left femur.

For this patient, no available treatment can significantly prolong survival, and no systemic treatment can reasonably be anticipated to improve quality of life. However, even though no therapy is of value in a *patient population*, an *individual patient* may benefit from specific antineoplastic therapy directed at a particular constellation of symptoms.

For example, this patient, who currently can walk and enjoys a reasonable quality of life, has an impending fracture of a large weight-bearing bone. A pathologic fracture of the femur might be difficult to treat and could force the patient to spend a considerable portion of his remaining life seriously incapacitated—perhaps even confined to bed. However, prophylactic pinning of the bone and radiation therapy to the involved area may prevent this complication. Although the impact on survival may be minimal, and one will never know if the femur actually would have fractured without treatment, prevention of a serious complication of cancer can certainly be recommended in this specific clinical setting.

However, prophylactic treatment of potential complications of cancer should be employed sparingly. Patients with advanced cancer experience numerous symptoms and complications during the natural history of their illness. In general, it is difficult to predict if and when specific symptoms will develop.

In addition, treatment to prevent a possible complication may seriously hinder subsequent treatment of symptomatic complications in the same region. For example, a patient with breast cancer and documented but essentially asymptomatic metastasis to the spine should not be treated with radiation to this region unless serious symptoms develop. The radiation tolerance of the spinal cord is limited, and treatment of an asymptomatic metastatic focus may compromise one's ability to subsequently deliver a sufficient dose to any new lesion (which may be painful or compromise spinal-cord function) that may develop adjacent to the previously irradiated area.

Providing comfort

A 59-year-old woman has documented colon cancer metastatic to the liver. Although she has undergone several chemotherapeutic programs, a computed tomographic scan demonstrates progression of disease. The patient has lost 25 lb over the last 2 months, has limited appetite, and requires increasing doses of narcotic analgesics to reduce the severity of pain.

The goal of therapy in this patient is to optimally control her symptoms, principally pain—the most feared symptom and complication of advanced malignant disease. For the majority of patients with advanced cancer, *pain can be controlled* with appropriate and liberal administration of oral and parenteral narcotic analgesics.[7] Unfortunately, many physicians and patients feel uncomfortable about the aggressive use of narcotics, even when a patient is terminally ill.[8] Patients fear addiction, loss of control, and constipation.

Unfortunately, no protocols prescribe how much pain medication should be given to an individual patient with advanced cancer. Requirements for narcotic analgesics vary greatly from patient to patient and over the course of illness. Physicians should not conclude that a patient with advanced cancer is receiving enough pain medication if the patient continues to experience pain.

The hospice movement has helped focus attention on the needs of terminally ill cancer patients. Whether to enter a hospice program, either inpatient or outpatient, is a personal decision for each patient and family. Many physicians and their staff, often working with home nursing agencies, are able to provide excellent care outside the hospice setting.

Dealing with unrealistic goals

A 47-year-old woman has metastatic breast cancer that has failed to respond to several chemotherapeutic regimens. She now has evidence of progressive disease in the liver, lungs, and bone. A recent computed tomographic scan of the brain has revealed two new metastatic lesions. Despite the advice of her physician, the patient is currently searching for a bone marrow transplantation center that will treat her with high-dose chemotherapy.

Many desperate patients with advanced cancer, and their families, search for treatment programs that offer some hope to delay or prevent death. These programs include legitimate treatment trials at a number of centers throughout the United States. If a patient meets the eligibility criteria for such a program and is carefully informed about the risks and truly unknown benefits, it is quite reasonable to support a patient's request to enter such a study.

However, if the proposed therapy lacks scientific credibility, or if those promoting it offer unrealistic or clearly false claims of benefit, the patient's physician should make every effort to explain what is known and unknown about the therapy being recommended. These discussions are often quite difficult, for those supporting the "alternative treatment programs" offer *hope*, a very powerful motivating force.[9] Unfortunately, although we should strive to offer hope to patients with advanced cancer, an approach that applies useless and expensive procedures or that ultimately leads to additional pain and suffering cannot be accepted as a rational therapeutic option.

TABLE 2
GOALS OF ANTINEOPLASTIC THERAPY

Cure (expected or possible)
Prolongation of survival
Optimizing quality of life
Palliation of symptoms
Prevention of complications

SUMMARY

The clinician should attempt to define realistic goals of therapy for individual patients with cancer, not only at the initiation of treatment, but also at any other time when circumstances change. Any generalizations about the effectiveness of cancer therapy must be placed in the context of the individual patient. With this important caveat, *Table 2* outlines one possible categorization of the overall goals of antineoplastic therapy. Stopping to consider just what one is trying to accomplish with an individual patient can clarify the decision-making process and help the physician deliver effective, humane care.

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