Lung Ca Survival Rates

How long do people with cancer of the lung survive after treatment with radiotherapy, surgery or drug therapy? What are the survival statistics of those untreated?

M.D., Meadowbrook, Pennsylvania

The relative five-year survival rates in lung cancer for all stages of disease and for all cell types in each treatment category, according to end-results reports, is as follows: surgery, 33 percent; radiation, two percent; surgery and radiation, 14 percent; chemotherapy, < one percent; radiation and chemotherapy, one percent; and no therapy, < one percent. The median life expectancy without treatment is two months from diagnosis.

In our experience, the prognosis in lung cancer is profoundly affected by the cell type and by the anatomic extent of the disease at the time of treatment. More than 20 percent of patients with squamous cell carcinoma of the lung will survive five years regardless of treatment as compared to less than one percent of patients with undifferentiated small cell (oat cell) carcinoma. For all stages of lung cancer combined, the five-year relative survival rate is now 10 percent. If the disease is localized, the equivalent survival rate is 36 percent; if regional, 10 percent; and if distant metastases are present, one percent. Women have a better survival experience than men for localized disease but there is little sex difference in survival rates among patients with regional spread or distant metastases. These factors are particularly important in estimating prognosis following resection. If the disease is localized in the lung approximately 46 percent of patients with squamous cell carcinoma, adenocarcinoma, or undifferentiated large cell carcinoma will survive two years following surgery. With the same extent of disease, only six percent of patients with undifferentiated small cell (oat cell) carcinoma will survive their resection. If the disease has metastasized to the hilar lymph nodes (i.e., regional disease), 40 percent of patients with squamous cell carcinoma will still survive two years after surgery. With an adenocarcinoma or large cell carcinoma, however, the relative survival rate at two years falls to 14 percent and 13 percent respectively.

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Cancer of the Pancreas

What are the current methods available for diagnosing cancer of the pancreas and how effective are they? I am especially interested in pancreatic scans and angiography.

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The best method for making a diagnosis of primary cancer of the pancreas is early suspicion after the examining physician has taken an adequate history and completed an adequate physical examination. Without a high index of suspicion, the diagnosis will not be made until the lesion has progressed too far to permit saving the patient.

Once the physician has become sufficiently suspicious of the diagnosis, he should then proceed to intensive X-ray study of the stomach and duodenum with the hope that he may find some abnormality in the duodenum, the ampulla or the duodenal sweep that will lead to further evaluation of the patient. Unfortunately, radiologic signs of tumors arising in the head of the pancreas are frequently late signs, and therefore, even this modality of diagnosis may be tardy.

One of the newer techniques that is finding increasing favor is direct visualization of the ampulla through a flexible fibroscope with introduction of dye into the pancreatic ductal system so that abnormalities can be picked up on X-ray of the pancreatic ducts. One needs sufficient time, training, and experience to intubate the duct successfully.

There has been general disappointment with the techniques of pancreatic scan and angiography partly because the isotopes are not taken up as readily by the pancreas as would be desirable, and because angiography is usually not done until late or does not pick up a lesion until it is fairly large.

If a patient continues to have upper abdominal pain, weight loss, jaundice, unexplained blood in the stool or back pain, and adequate studies do not detect the cause, then exploration should be undertaken so that a histologic diagnosis can be obtained.

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Colon Cancer Diagnosis

How should cancer be ruled out in a 60-year-old obese male with emphysema and mild hypertension who has a 1 cm. in diameter sessile polyp of the mid-descending colon and vague nonspecific abdominal complaints.

M.D., Binghamton, New York

Since this patient is a poor operative risk, he should be colonoscoped first; only a small percentage of polyps this size are malignant.

If feasible, a biopsy should be obtained at the time of colonoscopy. If the polyp is benign histologically, the patient should have a barium enema every six months. If the polyp grows and the patient’s health improves, a transabdominal colectomy and excision of the polyp should be performed. If the polyp feels indurated and cancer is suspected, a resection of the entire segment of colon bearing the polyp is necessary.

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Drug Therapy For Solid Tumors

Which anticoagulant agent is the drug of choice in the treatment of solid tumors, particularly the breast, ovary and colon? At what level should the prothrombin time be maintained? Should treatment be continued indefinitely? Must anticoagulant therapy be used in conjunction with a chemotherapeutic agent? If so, which agent seems to work best in lesions of the breast, ovary or colon?

M. D., Montgomery, Alabama

Given the present state of the art, it is difficult to specifically answer these provocative questions. However, the entire question of anticoagulation as an adjunct to the treatment of cancer is now under increasing scrutiny. A knowledge of thrombopoiesis and blood coagulation is important in the pathogenesis and treatment of cancer since cancer is a common cause of secondary thrombocytosis, a hypercoagulable state which can at times lead to disseminated intravascular coagulation (DIC).

Studies, particularly in experimental animals with both transplanted and spontaneous tumors, have indicated that fibrin deposition is important for the growth of primary tumors and their metastatic spread. Fibrin is generally deposited in the periphery and provides an important lattice work for tumor growth. In addition, fibrin deposition may stimulate the development of new blood vessels for the developing tumor. The major anticoagulant employed to date in experimental animals has been warfarin.

R. Douglas Thorne at a recent Hahnemann symposium reported that in a partially controlled study warfarin, when combined with chemotherapy, hormone therapy, etc., approximately doubled survival in cancer patients. A wide variety of neoplasms were included, i.e., lymphoma, stomach, ovary, lung, breast, etc. However, many more strictly controlled clinical investigations using anticoagulants in human tumors are now needed. At the present we can not recommend an anticoagulant of choice. Concerning the prothrombin time, one would assume that it should be kept in therapeutic range but this is entirely conjecture. We have no knowledge whatsoever as to whether the treatment should be continued indefinitely. My present opinion is that in far advanced disease experimental anticoagulation should be combined with chemotherapeutic drugs and even immunologic techniques. One of the major questions that will have to be resolved is the use of anticoagulation following “curative” surgery, after which large percentages of patients develop metastatic disease. Should anticoagulation be used immediately after surgery to prevent the possibility of such metastases developing and should the anticoagulation be combined with adjuvant chemotherapy or immunotherapy? Obviously such questions can only be answered by further animal experimentation and well-designed and controlled clinical trials.

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Non-Hodgkin’s Lymphoma

M.D., Philadelphia, Pennsylvania

Malignant lymphoma is not one disease but many diseases. It consists of malignant lymphoma, histiocytic type; malignant lymphoma, lymphocytic type which may be poorly differentiated or well differentiated; and malignant lymphoma, undifferentiated cell type (non-Burkitt lymphoma). Each of these lymphomas may appear in a diffuse or a nodular pattern. There may or may not be bone marrow infiltration and leukemic manifestations in the bloodstream. Bone marrow involvement and leukemic conversion occur most frequently in malignant lymphoma, poorly differentiated lymphocytic type and malignant lymphoma, well-differentiated lymphocytic type; and least frequently in malignant lymphoma, histiocytic type.

The pathologist cannot resolve this dilemma purely on the basis of morphology. The histologic features of a lymph node biopsied from a child with acute lymphoblastic leukemia (A.L.L.) are similar to those observed in a lymph node biopsied from a patient with a malignant lymphoma, undifferentiated cell type (non-Burkitt lymphoma). When the bone marrow is involved in this latter type of lymphoma and immature blast-like cells are present in the peripheral blood the problem arises whether this patient has lymphoma or leukemia.

There are serious limitations using hematoxylin and eosin staining and other special cytochemical techniques in differentiating between lymphoma cells and leukemic cells. Occasionally, the preparation of imprints from lymph nodes, spleen, and bone marrow aspirate may help. Electronmicroscopic studies are rarely useful. Realizing that no techniques are available to unequivocally resolve this problem we have attempted to approach this situation in a simple workable fashion.

Some patients have malignant lymphoma without bone marrow (B.M.) involvement or abnormal cells in the peripheral blood (P.B.) at the onset of the disease, but then develop B.M. and P.B. involvement later in the course of disease. In these patients we consider the B.M. and P.B. involvement indicative of the leukemic phase of a malignant lymphoma. Other patients present with lymph node enlargement, often including prominent mediastinal adenopathy and significant bone marrow and peripheral blood involvement at the onset of disease. Those patients who have thrombocytopenia, are labeled A.L.L., whereas those who do not are considered to have lymphoma. A lymph node biopsy can then cytologically classify the malignant lymphoma. This latter type of neoplasm is thought by some to be of thymic origin (Smith, J. L., et al.: Lancet, Jan. 13, 1973). Studying such cases with techniques to determine B or T receptor sites may lead to a more refined resolution of this dilemma.

In practice, the pediatrician must resolve this dilemma speedily. The management of A.L.L. in children has been well worked out. Numerous reports have stressed that complete remissions are achievable by combination chemotherapy. Consolidation regimens and maintenance programs have extended life significantly for the over 90 percent of children who have complete remissions with induction programs. No such success can be reported for management of malignant lymphoma, stage IV (bone
marrow involvement). Fortunately, many of the drugs used for induction of remission in A. L. L. are useful in the management of malignant lymphoma. For example, prednisone, vincristine, and cyclophosphamide have therapeutic activity in both disorders. When in doubt, I recommend that the child be treated as if he has A. L. L. in order not to deny possibly effective therapy.

In summary, until specific tests (i.e. surface antibodies, antigen characteristics, chromosomal markers, etc.) become available, the pediatrician must use the criteria given above, keeping in mind that complete remissions are achievable mainly in A. L. L. by use of aggressive combination chemotherapy.

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5-FU and Cervical Ca

A 43-year-old woman underwent a local excision for breast cancer followed by bilateral oophorectomy. She was subsequently treated with radiation therapy and then with a 500 mg. weekly dose of 5-FU for two years. Recently, she was found to have an invasive carcinoma of the cervix which was treated with radium implants. Is 5-FU a possible cause of the cervical carcinoma? Should it be continued as chemotherapy for the breast and, if so, for how long?

M. D., Bridgeport, Illinois

The carcinogenic effects of alkylating agents, busulfan and procarbazine have been well documented in the literature. All these agents are immunosuppressive and mutatoragenic. 5-fluorouracil is also a strong immunosuppressive of primary antibody and delayed hypersensitivity responses with slightly lesser effectiveness on anamnestic responses. It is known to be a mutagen and a teratogen particularly in animals. A brief perusal of the literature revealed a few cases where prolonged exposures to 5-FU was cited as the possible causative agent of a cancer.

Almost all cancer chemotherapeutic agents are potential carcinogens, especially when long-term therapy is necessary. The dilemma is whether short courses of therapy or prolonged maintenance with one of these agents is preferable. The answer is not clear since the decision varies according to the tumor, the patient, and the physician.

In the above patient, it is possible that the drug may have played a part in inducing her carcinoma of the cervix. It must be remembered, however, that patients can and do develop multiple tumors without being given a cancer chemotherapeutic agent. It can only be decided in retrospect whether she should be continued on drug therapy. In survival studies of disseminated breast carcinoma, significant increases in longevity have been reported when patients were treated with 5-fluorouracil. In one particular study of 144 cases, the longest period of drug therapy was 15 months. One might speculate whether the patient presented has been cured by the surgery or the radiation or both. Was the drug therapy of no value or has it played a substantial part in keeping her free of disease?

The biological nature of tumors follows no rules and the tumor decides the fate of its host. If a carcinogen is present in the body, and if the environment is suitable, the patient will develop cancer—which may not be limited to a single site.

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