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TEXT:Lung cancer is the most common cancer-related cause of death among American men and women. The estimated incidence in 2007 for lung cancer now is 213,380, and estimated deaths will be 160,390, outnumbering deaths from breast, prostate and colon cancers combined.
If caught early, treatment is surgical removal of the tumor. For advanced-stage cancer, however, resection often is not possible, and radiation given with chemotherapy is the main treatment.
In the past 10 years, radiation therapy has become much more refined and sophisticated. Lung tumors can now be treated with high energy linear accelerators equipped with multileaf collimators that modulate the focused radiation beam (IMRT) and synchronize the radiation treatment with phases of respiration.
Based on an ultrasensitive imaging scan (PET/CT) to precisely map the extent and spread of the cancer, the lung tumor can be virtually reconstructed in three dimensions inside a computer. This allows a highly customized and individualized radiation therapy plan.
This also helps the physician avoid high doses of radiation on surrounding critical normal structures such as normal lung tissue, the heart and spinal cord, minimizing side effects and making the treatment safer.
On the chemotherapy side, more effective and better-tolerated chemotherapy such as carboplatin, taxol, gemcitibine and topotecan are available now. The FDA recently approved targeted drug therapy with medications such as avastine and tarceva for lung cancer treatments. As opposed to affecting normal cells and tumor cells by chemotherapy, this targeted drug therapy kills only the tumor cells by inhibiting blood vessel formation, which effectively starves the tumor.
The unprecedented study of the human genome is giving doctors new tools and ways to treat lung cancers with gene therapy and vaccines. Both of these novel cancer therapies now are being tested in human clinical trials.
Healthy genetic materials are introduced into the cancer cells via artificially created viruses. These viruses then spread through the tumor, causing programmed cancer cell death.
On the other hand, cancer vaccines are designed to stimulate the immune system to respond to cancer cells, which are not foreign to the body and do not cause an immune response.
Cancer vaccines use immune hormones to alert the immune system to create an army of immune cells to kill the cancer cells.
Talk to your physician for more information or to see how you can take part in a clinical trial studying these or other new treatments.
If you are diagnosed with lung cancer, before undergoing any treatment, talk with several cancer specialists including a radiation oncologist to find out which treatments are available for you.

Story 1 of 2

NEXT STORY PRIOR STORY GROUP PAGE SEARCH PAGE