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Lung Cancer Affects Sexes Differently

By DENISE GRADY

Women with lung cancer survive slightly longer than men with the disease, respond differently to at least one cancer drug and show higher levels of tobacco-induced genetic damage in their lungs, researchers are reporting today.

Some differences may stem from the effects of estrogen, whether naturally occurring or taken as a drug, and the scientists said more women should be included in studies of lung cancer to find out whether particular methods of treatment, prevention and detection are best suited to them.

The researchers also said that clarifying differences in the disease between men and women might yield information that would ultimately help both sexes.

"It may help us unlock some secret about how lung cancer behaves," said Dr. Peter B. Bach, a pulmonologist and an epidemiologist at the Memorial Sloan-Kettering Cancer Center in Manhattan who is an author of the report.

The other authors are Dr. Mark G. Kris, also of Sloan-Kettering, and Dr. Jyoti D. Patel of Northwestern University.

Their report reflects a growing medical interest in understanding differences in the way major diseases affect men and women. Researchers have recognized, for instance, that women who have heart attacks may not suffer the crushing pain that men experience and that women are more prone than men to autoimmune diseases like lupus and multiple sclerosis.

The article by Dr. Bach and his colleagues, being published today in The Journal of the American Medical Association, calls lung cancer "a contemporary epidemic" in women. Most cases, up to 80 percent in women, are from smoking. Last year, 80,100 new cases were diagnosed in American women, and 68,800 women died from the disease.

The report notes that although women's death rates from lung cancer have stabilized in the last five years, they may start increasing again as groups of women with the highest rates of smoking reach the age when cancers begin to develop.

Lung cancer is among the deadliest cancers, because it often starts spreading before being detected. Among cases diagnosed from 1992 to 1999, only 12 percent of patients over

The disease kills more women in the United States than any other cancer, as many as breast cancer and all gynecological cancers combined. Lung cancer passed breast cancer in 1987 as the leading cause of cancer deaths in women. From 1930 to 1997, as more and more women took up smoking, their death rate from lung cancer rose 600 percent.

Although smoking has been known for decades to cause most lung cancers, a quarter of adult women in the United States smoke. In 2000, 30 percent of high school girls surveyed said they had smoked in the last 30 days. Since the 1960's, smoking rates for American men have decreased nearly 50 percent. For women, the decrease is 25 percent.

Sharp increases in smoking among women in Africa, Japan and China portend epidemics in those places, the report says.

It is not known whether men and women who smoke are equally susceptible to lung cancer. Studies are divided, some finding a greater risk in women, some in men, and others finding no difference.

Biological differences in the disease itself do exist between men and women, the researchers said. Women are more likely than men to develop a type of cancer called adenocarcinoma. The reason is not known, though adenocarcinoma is the most common lung cancer among non-smokers, and women are less likely than men to smoke. But studies have also suggested that estrogen, either natural or as a drug, may stimulate adenocarcinomas.

Multiple studies have found higher rates of genetic damage caused by tobacco in lung tumors in female smokers than in male ones, even though the women had, over all, smoked less. Women also appear less able to repair genetic damage.

Compared with male smokers, women who smoke also have a more active version of a gene that makes chemicals in cigarette smoke more harmful to cells. Estrogen may make that gene more active.

Even though women appear more vulnerable to tissue damage from cancer-causing chemicals in cigarette smoke, those who develop lung cancer survive a bit longer than men with the disease. Researchers are not sure why, and that is another reason more research is needed, Dr. Bach said.