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Anti-estrogens May Offer Protection Against Lung Cancer Mortality

- Anti-estrogen therapy significantly decreased the risk of lung cancer death.
- Results support the role of estrogens in lung cancer management.

SAN ANTONIO – Anti-estrogens as therapy for breast cancer may also reduce the risk of death from lung cancer, according to study results presented at the CTRC-AACR San Antonio Breast Cancer Symposium, held here Dec. 9-13, 2009.

“We found a reduction in lung cancer mortality among women treated with anti-estrogens for breast cancer. This work builds on previous studies that had suggested estrogens have a role in lung cancer development and progression,” said Elisabetta Rapiti, M.D., M.P.H., medical researcher with the Geneva Cancer Registry, University of Geneva, Switzerland.

Rapiti and colleagues evaluated whether anti-estrogen therapy for breast cancer patients reduced their risk of subsequently developing and/or dying from lung cancer.

The study included 6,715 women living in the Geneva canton of Switzerland who were diagnosed with breast cancer, between 1980 and 2003. Forty-six percent of the women received anti-estrogen therapy, primarily tamoxifen.

By the end of the study period, 40 cases of lung cancer developed. There was no difference in the incidence of lung cancer among women with or without anti-estrogens compared with the general population. However, the risk of dying from lung cancer was significantly lower among women who received anti-estrogen therapy.

“Our results are particularly relevant to the research agenda exploring endocrine treatment(s) for lung cancer,” said Rapiti. “If prospective studies confirm our results and find that anti-estrogen agents improve lung cancer outcomes, this could have substantial implications for clinical practice.”

Phase II clinical trials are currently underway in a number of centers to evaluate the use of anti-hormone therapy as an adjunct to traditional chemotherapy for lung cancer, according to Rapiti.

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The mission of the CTRC-AACR San Antonio Breast Cancer Symposium is to produce a unique and comprehensive scientific meeting that encompasses the full spectrum of breast cancer research, facilitating the rapid translation of new knowledge into better care for breast cancer patients. The Cancer Therapy & Research Center (CTRC) at The University of Texas Health Science Center at San Antonio, the American Association for Cancer Research (AACR), and Baylor College of Medicine are joint sponsors of the San Antonio Breast Cancer Symposium. This collaboration utilizes the clinical strengths of the CTRC and Baylor, and the AACR's scientific prestige in basic, translational and clinical cancer research to expedite the delivery of the latest scientific advances to the clinic. The 32nd annual symposium is expected to draw more than 8,500 participants from more than 90 countries.

Presenter Name: Elisabetta Rapiti, M.D., M.P.H.

Abstract Number: 35

Institution: University of Geneva

Abstract Title: Reduced Lung Cancer Mortality Risk among Breast Cancer Patients Treated with Anti-Estrogens

Abstract Body:

Background: The Women Health Initiative study recently reported that women on hormone replacement therapy (HRT) were at increased risk of dying from lung cancer. If exposure to estrogens can worsen lung cancer outcome, we hypothesized that anti-estrogens may, on the contrary, improve its prognosis. We compared lung cancer incidence and mortality among breast cancer patients with and without anti-estrogen therapy.

Methods: All 6715 patients recorded with a breast cancer in the population-based Geneva Cancer registry in the period 1980-2003 were included in the study. Forty-six percent of these women (3066) received anti-estrogen therapy (tamoxifen in large majority). Age, sex and year-specific population data were used to calculate standardised incidence ratios (SIRs) and standardised mortality ratios (SMRs), to compare the study population to the general female population of Geneva canton. For each woman we computed person-years at risk from the date of diagnosis of breast cancer to the date of diagnosis of invasive lung cancer, date of death, date lost to follow-up, or end of the study period (December 31, 2007).

Results: The cohort yielded a total of 57,100 person-years.

During the study period we observed a total of 40 cases of metachronous lung cancers (diagnosed at least six months after the breast cancer). Compared with the general population, the risk of developing a lung cancer among women who received anti-estrogens was 0.63 (95% Confidence Intervals [CI]: 0.33-1.10) and among women without anti-estrogens was 1.12 (95% CI: 0.74-1.62). Lung cancer mortality rate was 31.44/100,000. The mortality rate were 9.23/100,000 for women with anti-estrogens and 44.97/100,000 for women without anti-estrogens.

Compared to the general population the SMR for lung cancer was 0.13 (95% CI: 0.02-0.47) among women who took anti-estrogens ($p < 0.001$), and 0.76 (95% CI: 0.43-1.23) among women who did not receive anti-estrogens.

Discussion: Women who received anti-estrogens as breast cancer treatment have a significantly decreased risk of dying from lung cancer. This result further supports the role of estrogens in lung cancer prognosis and suggests that exposure to anti-estrogens may offer some protection against tumor mortality.