

MEDICAL BREAKTHROUGHS **RESEARCH SUMMARY**

TOPIC: NEW IMMUNOTHERAPY TREATMENT FOR LUNG CANCER: TECENTRIQ
REPORT: MB #4821

BACKGROUND: Lung cancer (both small cell and non-small cell) is the second most common cancer in both men and women. The American Cancer Society estimates about 228,500 new cases of lung cancer (116,000 in men and 112,500 in women) in the U.S. in 2020. Lung cancer mainly occurs in older people who are typically diagnosed around age 65 or older. It starts when cells in the body begin to grow out of control and embed in the cells lining the bronchi and parts of the lung such as the bronchioles or alveoli. Lung cancer may spread from the lungs to lymph nodes or other organs in the body, such as the brain. Cancer from other organs also may spread to the lungs.

(Source: <https://www.cancer.org/cancer/lung-cancer/about/key-statistics.html> and https://www.cdc.gov/cancer/lung/basic_info/what-is-lung-cancer.htm)

TWO MAIN TYPES OF LUNG CANCER: About 80 to 85 percent of lung cancers are non-small cell lung cancer (NSCLC). The subtypes of NSCLC are adenocarcinoma, squamous cell carcinoma, and large cell carcinoma. Adenocarcinomas start in the cells that would normally secrete substances such as mucus. This type of lung cancer occurs mainly in current or former smokers but is also the most common type of lung cancer seen in non-smokers. Squamous cell carcinomas start in squamous cells, which are flat cells that line the inside of the airways in the lungs and are often linked to a history of smoking. Large cell carcinoma can appear in any part of the lung and tends to grow and spread quickly, which can make it harder to treat. About 10 to 15 percent of lung cancers are small cell lung cancer (SCLC), and about 70 percent of people with SCLC will have cancer that has already spread at the time they are diagnosed. Since this cancer grows quickly, it tends to respond well to chemotherapy and radiation therapy.

(Source: <https://www.cancer.org/cancer/lung-cancer/about/what-is.html>)

NEW TECHNOLOGY: Atezolizumab, also called MPDL-3280, is an inhibitor that targets PDL1 and reactivates the immune system. Drug trials showed that drug was active in a number of tumor types, including lung cancer. Roy Herbst, MD, PhD, chief of medical oncology at Yale Cancer Center says, "We also had biopsies and took tissue and samples from patients and understood a bit about the mechanism. So, we developed a biomarker and knew that patients with a high level of a certain protein called PDL1 happened to do better when treated with this drug. Fast forward 8 years, that drug was in early phase trials and then moved all the way to phase two and phase three, meaning to the forefront treatment of lung cancer. Who would imagine that you could treat someone with advanced lung cancer disease?" Researchers conducted a randomized trial comparing atezolizumab to chemotherapy in a group of patients that had high levels of the immune marker. The trial concluded that there was a 40 plus percent improvement in survival in those patients who got the Atezolizumab immunotherapy versus chemotherapy.

(Source: Roy Herbst, MD, PhD, Chief of Medical Oncology at Yale Cancer Center)

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com