

The link between TB and a gene mutation that causes lung cancer

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Tuberculosis (TB) has been suspected to increase a person's risk of lung cancer because the pulmonary inflammation and fibrosis can induce genetic damage. However, direct evidence of specific genetic changes and the disease have not been extensively reported.

Research presented in the February 2012 issue of the International Association for the Study of Lung Cancer's [Journal of Thoracic Oncology](#) shows a link between TB and mutations in the [epidermal growth factor receptor](#) (EGFR), a type of [gene mutation](#) found in non-small cell lung cancer. Researchers concluded that there is a relationship between pulmonary TB and EGFR mutations in patients with adenocarcinoma of the lungs. Adenocarcinoma is the most common type of lung cancer.

The researchers, including IALSC members Dr. Yuh-Min Chen, Dr. Reury-Perng Perng and Dr. Yu-Chin Lee, studied 275 patients with pulmonary adenocarcinoma between June 1999 and January 2011. Of those patients, 191 had EGFR mutations. Their findings show that "old TB lesions and scar cancer had a statistically significant association with EGFR mutation, especially exon 19 deletions," the most common type of EGFR tumor mutation.

The incidence of tumor EGFR mutations is found to be higher in East Asian countries, such as Taiwan, as is the prevalence of [pulmonary TB](#) infection. The good news is that tumors with the EGFR mutation have a 75 percent response rate when treated with EGFR-tyrosine kinase

inhibitors. This is likely why, according to the study, "those patients with old TB lesions who had EGFR mutations or exon 19 mutations survived longer than those who did not."

Provided by International Association for the Study of Lung Cancer

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