EGFR Exon20 Insertion+ mNSCLC: **A Rare Form of EGFR NSCLC with a Poor Prognosis**

Despite substantial improvements in cancer detection and treatment over the past few decades, lung cancer remains the leading cause of cancer death, responsible for about 20% of cancer-related deaths worldwide, or about 1.8 million people, each year.[1]

WHAT IS NON-SMALL CELL LUNG CANCER (NSCLC)?

NSCLC is the **most common form** of lung cancer, accounting for **approximately 85%** of all lung cancers.[2]

NSCLC is complex to study, diagnose and treat because there are a number of different genetic mutations associated with it.[3]

WHAT IS EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) EXON20 INSERTION+ METASTATIC NSCLC (mNSCLC)?

EGFR exon20 insertion+ mNSCLC is a rare subset of lung cancer, representing 1-2% of all patients with NSCLC.[4-6]

EGFR, a protein found on the surface of some cells, binds to epidermal growth factor and is involved in controlling cell division. EGFR mutations, which can be found within lung cancer cells, can cause over-activation of the protein and cells to divide and multiply more rapidly. The exon refers to the location of the EGFR mutations, which can be found on exon 18, 19, 20 or 21.

EGFR exon20 insertion+ mNSCLC is more common in:[7,8]

Women

People with adenocarcinoma, which is defined as cancer that begins in the glandular cells

People who have never smoked or lightly smoked

People of Asian descent

DIAGNOSIS AND TREATMENT FOR PATIENTS WITH EGFR EXON20 INSERTION+ mNSCLC

There is an urgent need to more broadly implement comprehensive genomic testing to identify patients with EGFR exon20 insertion mutations.

Next-generation sequencing (NGS) offers complete coverage to more accurately detect mutations compared to polymerase chain reaction (PCR) tests, especially in cases of rarer genetic mutations.[9-12]

PCR and NGS testing both have the ability to detect EGFR exon20 insertion status, however, PCR testing detects only 40%-50% of EGFR exon20 insertion variants, while NGS testing provides complete coverage and ensures patients with exon20 insertions will be diagnosed accurately.[9-11]

A proper diagnosis is crucial to optimizing treatment. Identifying the type of NSCLC a patient has and any underlying mutations that are driving it ensures they receive the best treatment option(s) available to them.

Chemotherapy is the current standard of care for patients with EGFR exon20 insertion+ mNSCLC, as EGFR tyrosine kinase inhibitors (TKIs) and immunotherapy have demonstrated limited clinical benefit for this population of patients.

Results shown with chemotherapy in previously treated patients are suboptimal, demonstrating an objective response rate (ORR) of less than 15% and a median progression-free survival (PFS) of around three to five months.[13-15]

Expanded genomic testing and the continued investigation of novel therapies is needed to help identify and ultimately improve outcomes for people living with EGFR exon20 insertion+ mNSCLC.

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