



2025 Spanish Lung Cancer Video Library

EGFR: How Treatment was Developed

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Transcript

Dr. Raez: Hello, friends. How are you? I'm Luis Raez, medical director of the Memorial Cancer Institute in Miami. As you know, I'm a thoracic oncologist specializing in lung cancer research and treatment. And I have the pleasure today to speak for GRACE, this wonderful organization that provides education not only about lung cancer but also about many other cancers. Please visit our website, where there are very interesting videos that can help support treatment and educate patients and families about lung cancer and other cancers.

Today, we're going to talk briefly for 20 minutes about therapy for EGFR and ALK, which are two very important genes, as you know, in lung cancer. And we want to talk about these two genes because in 2024, which is already over, there has been a lot of progress. So, we're going to summarize this, and there are drugs we're using that are new, and in Latin America, most countries don't even have them. So, we're going to give you a brief review, and we hope you enjoy it. Let's first talk about the use of EGFR in patients with early stages.

As you know, we have six tyrosine kinase inhibitors, and I know that most use only osimertinib because in the Western Hemisphere, the drug of choice has always

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been osimertinib. However, you have to keep in mind that in the Eastern Hemisphere, the most popular drug is icotinib, which is being tested in China and is used by more than 30,000 people. And let's see in which cases we use the others, right? When? Well, when we talk about kinase mutations, EGFR. We always have to remember that some people get confused, right?

You can see in the figure that we're talking about 18, 19, 20, and 21, which are the locations where mutations occur most frequently, and as you may recall, Exon 19 and Exon 21. These are the most common sites, with more than 80% of EGFR mutations occurring there. So, we almost always talk about Exon 19 and Exon 21. But this graph is to remind you that Exon 18 is also where the mutations are. In English, we call it "uncommon," not the mutations that aren't common.

And Exon 20 is very important because there are not only mutations, but there are also resistant mutations and there are approved drugs for that.

This is a real-life case. It's a 62-year-old patient of mine with stage 4 carcinoma who underwent genetic sequencing. Nothing was found. He was given carboplatin.

This was the standard treatment ten years ago. The patient responded, then stopped responding. It was given. At that time, not even a second line was approved. And finally, the patient failed. And as you can see in the X-ray in the center, the patient had very advanced respiratory disease. The patient was considering going to hospice because the third line of treatment he was assigned, docetaxel, didn't have much chance of success. However, we persisted and repeated the genetic sequencing.

This time, it's a complete genetic sequencing, because in ancient times, remember, hotspots were done, where they simply analyzed pieces of DNA, and we discovered

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that the reason they hadn't found it was because the patient had a fusion. This is an EGFR-RAD51 fusion.

This case simply illustrates that you have to be very persistent in searching for genetic aberrations, because otherwise, patients won't benefit. This patient—thanks to finding this fusion, we gave him afatinib, which was the first-line treatment at that time, many years ago, and the patient lived two more years. As you can see, afatinib completely cleared the lungs, with a very good response. So, as I was saying, remember, EGFRs aren't generally mutations, but we do occasionally find fusions.

And please do exhaustive genetic sequencing on fluid, tissue, DNA, RNA, because that's how our patients are going to benefit the most the more of these genetic aberrations we find.

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