Metastatic NSCLC

Adenocarcinoma - PD-L1 TPS 70% - no classic driver - suspected pneumonitis

MUSTER-03 - 66 years - male - ECOG 1

SYNTHETIC SAMPLE CASE - for platform demonstration only. No real person, no documented treatment success and no individual treatment instruction.

Executive Summary

This sample report demonstrates how Medical Evidence AI converts clinical baseline information, pathology, molecular biomarkers, organ function and supportive immune/tumour-dynamics data into a structured evidence discussion. Validated treatment-relevant findings are explicitly separated from exploratory additional findings.

Core clinical question

How should anti-tumour efficacy evidence be balanced with toxicity work-up when suspected immune-mediated pneumonitis interrupts treatment?

Clinical Review Required

Medical Evidence AI provides structured evidence synthesis as a basis for professional discussion. This sample report is not a diagnosis, prescription or individual treatment instruction. Treatment decisions remain with the qualified treating team/tumour board. Current approvals, guidelines and trial availability must be checked for every live case.

1. Clinical course & structured diagnostics

Metastatic NSCLC

Clinical course

• Metastatic pulmonary adenocarcinoma.

• Broad NGS without EGFR/ALK/ROS1/RET/MET exon 14/BRAF V600E/NTRK; KRAS G12C negative; PD-L1 TPS 70%.

• Platinum + pemetrexed + checkpoint inhibitor initiated.

• After several cycles: new dyspnoea and bilateral infiltrates; treatment paused because immune-mediated pneumonitis is suspected.

Diagnostics & biomarkers

• High-resolution CT with radiologic pattern description.

• Oxygen saturation and blood gases according to severity; infection work-up and pulmonary review.

• CRP, CBC, renal/hepatic function and complete corticosteroid exposure.

• Original broad NGS and PD-L1 report should be verified.

• TBNK may provide context but cannot diagnose pneumonitis or determine rechallenge.

Why these diagnostics matter

The purpose is not to collect the maximum number of laboratory values. The report separates findings that can select an established treatment, findings that affect safety or dosing, and measurements that provide supportive or exploratory longitudinal context. This distinction reduces the risk that immune-cell counts or CTC measurements are treated as stand-alone treatment indications.

2. Evidence Interpretation

• Before treatment continuation, infection, tumour progression and other causes of pulmonary infiltrates must be distinguished from immune toxicity.

• PD-L1 and driver-negative status are relevant to systemic-treatment evidence but do not override toxicity severity.

• Safety diagnosis and toxicity grade can become more decision-relevant than exploratory tumour-dynamics markers.

Options for professional discussion

• Management of suspected immune-related pneumonitis according to severity and specialist assessment.

• Rechallenge only after multidisciplinary review of toxicity grade, recovery, alternatives and risk-benefit context.

• Non-immunotherapy systemic options according to previous exposure and disease course.

• Local treatment can be discussed in a genuinely oligoprogressive setting.

Interpretation limits

Temporal association between treatment, immune status, CTC trajectory and imaging does not establish causality. In a live report, assay method, reference ranges, treatment timing, imaging and clinical course must be assessed together. No option is automatically ranked as the correct treatment.

3. Evidence Matches - study comparison

Medical Evidence AI does not present study titles alone. The relevant elements are population, intervention, clinically relevant outcome, match to the case and limitations of transferability.

KEYNOTE-189

Population / evidence: Metastatic nonsquamous NSCLC without sensitising EGFR/ALK alterations; platinum/pemetrexed plus pembrolizumab.

Match to this sample case: Relevant to the initial systemic-treatment strategy.

Limitation: Does not answer an individual rechallenge decision after clinically significant pneumonitis.

Immune-toxicity guidelines

Population / evidence: Consensus/guideline frameworks stratify pneumonitis evaluation and management by severity.

Match to this sample case: Directly relevant because treatment was interrupted for suspected immune toxicity.

Limitation: Diagnosis remains clinical and requires exclusion of competing causes.

Molecularly selected NSCLC evidence

Population / evidence: Targeted therapy depends on a validated actionable driver.

Match to this sample case: Broad negative testing supports the absence of a classic targeted option in this synthetic profile.

Limitation: Assay breadth, quality and emerging targets must be verified in a live case.

4. Applicability & evidence gaps

Evidence gaps

• Confirmed pneumonitis grade and exclusion of infection.

• Exact checkpoint inhibitor, cumulative exposure and response before interruption.

• Complete original NGS report and imaging trajectory.

• Pulmonary function and steroid course where clinically relevant.

Exploratory / immunological context

No dendritic-cell therapy is proposed in this sample. The case is designed to show that safety diagnostics and toxicity management can dominate the evidence discussion even when immunological measurements are available.

The report prioritises unresolved issues that may change the treatment sequence before purely exploratory additional testing. A live analysis would additionally verify the current guideline version, regional approval status and active clinical trials at the time of assessment.

5. Tumour-board questions, sources & final assessment

Questions for the treating team / tumour board

• Is the pulmonary event sufficiently characterised to guide immunotherapy management?

• What anti-tumour benefit was achieved before interruption?

• What alternatives exist if rechallenge is considered too risky?

• Does imaging represent diffuse toxicity, progression or an oligoprogressive pattern?

Selected evidence anchors

• Current NSCLC treatment guidelines and regional labels.

• KEYNOTE-189 as an evidence anchor for first-line chemo-immunotherapy.

• Current immune-related adverse-event guidance for pneumonitis assessment and management.

Final assessment

The value of the report lies not in an automated treatment recommendation, but in a transparent connection between diagnostics, patient context and evidence. It shows where an option matches well, where important differences from the study population remain, and which information is still required before a medical decision.

Clinical Review Required

Medical Evidence AI provides evidence synthesis and decision support. It does not replace diagnosis, prescribing, multidisciplinary review or treatment decisions by qualified medical professionals.