

From Palliation to Consolidation – the Role of Radiation Therapy in Metastatic Small-Cell Lung Cancer

Assiya Benamar^{1,2}, Samia EL khalfi^{1,2}, Kawtar Soussy^{1,2}, Wissal Hassani^{1,2},
Fatima Zahra Farhane^{1,2}, Zenab Alami^{1,2}, Touria Bouhafa^{1,2}

1 Radiotherapy Department, Oncology Hospital, Hassan II University Hospital, Fez, Morocco

2 Faculty of Medicine and Pharmacy, Sidi Mohammed Ben-Abdellah University, Fez, Morocco

doi: 10.53011/JMRO.2025.02.02

ISSN: 2784 – 0131

Received December 17, 2025

Revised December 31, 2025

Accepted December 31, 2025

Available online December 31, 2025

*Corresponding author:

Assiya Benamar

Email: assiyabenamar@gmail.com

Copyright 2025 The Author(s).

Published by Casa Cărții de Știință

This is an open access article under a CC-BY

license

ABSTRACT

Background: Small-cell lung cancer (SCLC) is an aggressive neuroendocrine malignancy characterized by rapid proliferation, early metastatic spread, and poor prognosis. Approximately 70% of patients are diagnosed with extensive-stage disease, for which systemic therapy remains the cornerstone of treatment. However, despite high initial response rates, intrathoracic and intracranial disease control remains a major challenge.

Objective: This review aims to critically assess the current role of radiotherapy in extensive-stage SCLC, with a particular focus on prophylactic cranial irradiation (PCI), thoracic consolidative radiotherapy, and emerging strategies in the era of chemo-immunotherapy.

Methods: We reviewed pivotal randomized trials, contemporary imaging-driven studies, and ongoing clinical trials evaluating radiotherapy-based strategies in extensive-stage SCLC, including thoracic consolidation, brain-directed approaches, oligometastatic treatment, and combinations with immunotherapy and novel systemic agents.

Results: Historically, PCI and thoracic consolidative radiotherapy demonstrated benefits in disease control and long-term survival in selected patients treated in the pre-immunotherapy era. However, advances in brain MRI surveillance and the integration of immune checkpoint inhibitors have challenged the systematic use of these approaches. Recent and ongoing trials are exploring optimized patient selection, radiotherapy timing, dose and volume adaptation, hippocampal-sparing techniques, stereotactic approaches, and synergistic combinations with immunotherapy. Novel agents such as DLL3-targeting bispecific antibodies further expand therapeutic perspectives.

Conclusion: Radiotherapy remains a key component of multimodal management in extensive-stage SCLC beyond palliation. Its optimal integration in the chemo-immunotherapy era requires a personalized, multidisciplinary approach, and the results of ongoing clinical trials will be critical to refining its indications and therapeutic impact.

1. Introduction

Small-cell lung cancer (SCLC) is a high-grade neuroendocrine malignancy characterized by rapid proliferation, marked biological aggressiveness, and an early tendency for metastatic dissemination. It accounts for approximately 13–15% of all lung cancers and

remains associated with a poor prognosis despite recent therapeutic advances (1).

From a clinical perspective, disease course and survival in patients with SCLC are closely related to the stage at diagnosis. Localized disease, corresponding to limited-stage SCLC, is associated with a median survival of approximately 25–30 months when a multimodal treatment strategy is feasible. In contrast, the

majority of patients (around 70%) are diagnosed with extensive-stage disease (stage IV), with a median survival not exceeding 10–12 months, despite high initial response rates to systemic therapies (1,2).

Recent advances in imaging have significantly improved initial staging. The routine use of positron emission tomography combined with computed tomography (PET-CT) has enhanced the detection of subclinical metastatic disease, while brain magnetic resonance imaging (MRI) has become the reference modality for screening cerebral metastases, which are common in SCLC. These developments have led to more accurate staging and improved patient selection for different therapeutic strategies (3).

In parallel, technological innovations in radiotherapy have profoundly transformed clinical practice. The development of modern conformal radiotherapy techniques, such as volumetric modulated arc therapy (VMAT), now allows improved tumor coverage while reducing radiation exposure to organs at risk. Moreover, the evolution toward smaller target volumes, particularly through the adoption of involved-field radiotherapy concepts, has contributed to reducing treatment-related toxicity without compromising tumor control (4,5).

Within this context of improved staging, technological progress, and evolving systemic treatments, the role of radiotherapy in extensive-stage SCLC warrants reappraisal. Once largely confined to a palliative role, radiotherapy may now play a more integrative role in selected patients, both for locoregional disease control and as part of combined modality treatment strategies.

Given the predominance of extensive-stage disease at diagnosis and the limitations of systemic therapies alone, a focused analysis of the management of extensive-stage SCLC—and in particular the role of radiotherapy—appears essential.

2. Extensive-stage SCLC: current challenges and clinical data

Despite a high initial sensitivity to chemotherapy and to combined chemo-immunotherapy regimens, control of thoracic disease remains a major challenge in extensive-stage small-cell lung cancer (SCLC). Several studies have shown that approximately 70–75% of patients have persistent thoracic disease after initial systemic treatment, reflecting incomplete locoregional control (6,7).

Furthermore, intrathoracic progression occurs early during the course of the disease. Up to 90% of patients develop thoracic progression within the first year following diagnosis, even in the presence of an initial favorable response to systemic therapy. This persistent or recurrent thoracic disease represents a major source of morbidity and may contribute to deterioration in performance status, thereby limiting access to subsequent lines of treatment (8).

These findings highlight that systemic therapy alone is insufficient to achieve durable disease control, both at the locoregional and metastatic levels. In this context, improving local tumor control emerges as a key therapeutic challenge in extensive-stage SCLC, supporting the investigation of strategies incorporating additional local treatments.

By analogy with the issue of intracranial disease control—which led to the evaluation of prophylactic cranial irradiation (PCI)—the potential role of thoracic consolidative radiotherapy has been explored in patients achieving a response to initial systemic therapy. Such approaches aim to reduce the risk of local progression, prolong disease control, and potentially improve overall survival in carefully selected patients.

This rationale naturally leads to a discussion of the respective roles of PCI and thoracic radiotherapy in extensive-stage SCLC.

3. Prophylactic cranial irradiation in extensive-stage small-cell lung cancer

Extensive-stage small-cell lung cancer (SCLC) is characterized by a strong propensity for cerebral dissemination, which is associated with substantial neurological morbidity and a significant deterioration in quality of life. The cumulative risk of brain metastases exceeds 50% during the course of the disease, even among patients achieving an initial favorable response to systemic therapy. This observation provided the rationale for the development of preventive strategies such as prophylactic cranial irradiation (PCI).

Historically, PCI was evaluated in extensive-stage SCLC based on compelling results obtained in limited-stage disease. The randomized phase III trial conducted by Slotman et al. (EORTC 08993-22993) represented a major milestone in this setting. This study included 286 patients with extensive-stage SCLC who had responded to chemotherapy, without systematic baseline brain imaging. Patients were randomized to receive either PCI or observation. PCI

significantly reduced the incidence of symptomatic brain metastases at one year (14.6% vs. 40.4%, $p < 0.0001$) and improved overall survival, with a median survival of 6.7 months versus 5.4 months and a one-year survival rate of 27.1% versus 13.3% in the control arm. These findings led to the adoption of PCI as a standard of care in patients with extensive-stage SCLC responding to chemotherapy for more than a decade.

However, advances in diagnostic practices, particularly the routine use of brain magnetic resonance imaging (MRI), prompted a critical reappraisal of this strategy. The Japanese randomized phase III trial conducted by Takahashi et al. enrolled 224 patients with extensive-stage SCLC who had responded to platinum-based chemotherapy and all had a negative brain MRI at baseline. Patients were randomized to receive PCI (25 Gy in 10 fractions) or MRI surveillance with treatment of brain metastases at the time of detection. In contrast to the EORTC trial, this study did not demonstrate an overall survival benefit with PCI, with a median survival of 11.6 months in the PCI arm versus 13.7 months in the surveillance arm ($p = 0.094$), despite a significant reduction in the incidence of brain metastases.

The discrepancy between these two trials can largely be explained by major methodological differences. In the EORTC trial, the absence of systematic baseline brain imaging likely resulted in the irradiation of subclinical brain metastases already present at the time of treatment, potentially accounting for part of the observed survival benefit. Conversely, the Japanese study was based on a modern MRI surveillance strategy, enabling early detection and targeted treatment of brain metastases, thereby reducing the potential impact of PCI on overall survival.

These data have led to an evolution in clinical practice and recommendations. PCI in extensive-stage SCLC is no longer considered a systematic approach and should be discussed on a case-by-case basis, taking into account patient performance status, response to systemic therapy, life expectancy, the risk of neurocognitive toxicity related to irradiation, and the feasibility of regular brain MRI surveillance. In patients for whom close MRI follow-up is feasible, an active surveillance strategy with deferred treatment of brain metastases represents a valid alternative to PCI.

Finally, the recent introduction of immunotherapy in the first-line treatment of extensive-stage SCLC raises additional questions regarding the role of PCI.

Pivotal trials incorporating immune checkpoint inhibitors did not systematically evaluate the impact of PCI, and specific data remain limited. The potential effect of immunotherapy on the incidence of brain metastases and on the benefit–risk balance of PCI warrants further investigation in dedicated prospective studies.

4. Thoracic consolidative radiotherapy in extensive-stage small-cell lung cancer

In extensive-stage small-cell lung cancer (SCLC), standard treatment is based on platinum–etoposide chemotherapy, now combined with immunotherapy. Although these treatments achieve high initial response rates, locoregional control remains insufficient, with frequent persistence of residual thoracic disease and a high risk of early intrathoracic progression. Approximately 70–75% of patients have persistent thoracic disease after chemotherapy, and up to 90% develop intrathoracic progression within the first year, highlighting the limitations of systemic therapy alone and supporting the evaluation of additional local treatment strategies.

In this context, thoracic consolidative radiotherapy has been investigated as a means to improve locoregional control and potentially overall survival. The CREST trial (Chest Radiotherapy Extensive-Stage Small-Cell Lung Cancer Trial), published by Slotman et al. in 2015, represents the pivotal study evaluating this approach in extensive-stage SCLC (9). This randomized phase III trial included 498 patients with extensive-stage SCLC who achieved a complete or partial response after 4–6 cycles of platinum–etoposide chemotherapy. All patients received prophylactic cranial irradiation and were then randomized to receive either thoracic consolidative radiotherapy or no thoracic radiotherapy.

Thoracic radiotherapy was delivered at a dose of 30 Gy in 10 fractions using two-dimensional or three-dimensional conformal techniques. Target volumes were defined based on post-chemotherapy residual disease, including the residual gross tumor volume with a 15-mm margin to generate the planning target volume, without elective irradiation of initially involved nodal areas. Strict dosimetric constraints were applied, particularly a lung V20 below 35%, in order to limit pulmonary toxicity (9).

The primary endpoint of the CREST trial was overall survival at one year. This analysis did not show

a statistically significant difference between the two arms, with one-year survival rates of 33% in the thoracic radiotherapy arm and 28% in the control arm ($p = 0.066$). However, significant benefits were observed for several secondary endpoints. Overall survival at two years was significantly improved in the thoracic radiotherapy arm (13% versus 3%, $p = 0.004$), suggesting a long-term benefit in a subset of selected patients (9). In addition, progression-free survival at six months was significantly higher in the thoracic radiotherapy arm (24% versus 20%, $p = 0.001$), reflecting improved tumor control.

The hazard ratio for overall survival was 0.84 in favor of thoracic radiotherapy, indicating a moderate relative reduction in the risk of death. Subgroup analyses suggested that the benefit of thoracic consolidative radiotherapy was more pronounced in patients with limited metastatic burden, particularly in the absence of liver or brain metastases, and in those who achieved a good response to initial systemic therapy (9,10). These findings emphasize the importance of careful patient selection for this strategy.

In terms of safety, thoracic consolidative radiotherapy was generally well tolerated, with acceptable pulmonary and esophageal toxicity, likely related to the use of limited target volumes and moderate dose-fractionation schedules (9). These data confirm the feasibility of this approach in a selected population of patients with extensive-stage SCLC.

At present, evidence from the CREST trial and subsequent analyses suggests that thoracic consolidative radiotherapy represents a relevant therapeutic option for patients with extensive-stage SCLC who respond to initial systemic therapy, have good performance status, and exhibit persistent residual thoracic disease (10,11). Its primary goal is to improve locoregional control and prolong long-term survival in a subset of patients. However, its exact role in the era of immunotherapy remains to be defined, and prospective studies are needed to determine optimal sequencing and to identify the patients most likely to benefit.

5. Therapeutic perspectives and ongoing clinical trials

Despite the recent integration of immunotherapy into first-line treatment, the prognosis of extensive-stage small-cell lung cancer (SCLC) remains poor, with frequent relapses and insufficient locoregional disease control. In this context, several ongoing clinical trials

are exploring innovative strategies aimed at optimizing the combination of radiotherapy and systemic treatments, refining brain-directed management, and evaluating novel therapeutic agents. These approaches rely on improved patient selection, earlier integration of local therapies, and increased personalization of treatment strategies.

6. Integration of thoracic radiotherapy in the era of chemo-immunotherapy

The TREASURE trial is a randomized phase II study evaluating the contribution of thoracic consolidative radiotherapy in patients with extensive-stage SCLC who have responded to induction therapy with carboplatin, etoposide, and atezolizumab (12). Patients are randomized to receive either thoracic radiotherapy (30 Gy in 10 fractions) combined with atezolizumab maintenance or atezolizumab maintenance alone. Stratification factors include the presence of brain metastases, thoracic response after induction, and the use of prophylactic cranial irradiation. This trial primarily aims to assess the feasibility and tolerability of this combined approach, as well as its potential impact on locoregional control.

Complementarily, the TRIPLEX trial investigates the addition of thoracic radiotherapy to a standard chemo-immunotherapy strategy in extensive-stage SCLC (13). This study is based on the hypothesis of a synergistic interaction between radiotherapy and immunotherapy, whereby radiotherapy may enhance antitumor immune responses through antigen release and modulation of the tumor microenvironment. The results of these studies are expected to better define the optimal sequencing and the precise role of thoracic radiotherapy in the immunotherapy era.

According to recent ESMO–ESTRO consensus statements, no major safety concerns have been identified overall with the combination of thoracic radiotherapy and PD-(L)1 inhibitors, although a modest increase in the risk of pneumonitis has been reported, with an estimated rate of grade ≥ 3 pneumonitis of approximately 6% (14). The results of ongoing studies such as TREASURE and TRIPLEX are therefore expected to better define not only the efficacy, but also the optimal sequencing and safety profile of thoracic radiotherapy in the immunotherapy era.

7. Radiotherapy and the oligometastatic concept

The oligometastatic concept, well established in other solid tumors, is beginning to be explored in extensive-stage SCLC. The RAPTOR trial (NRG-LU007) evaluates the role of consolidative ablative radiotherapy to residual thoracic and/or extracranial sites (thorax, liver, and other locations) in patients with stable disease or response following chemo-immunotherapy (15). Patients are randomized to receive atezolizumab maintenance alone or atezolizumab combined with radiotherapy to all residual disease sites. This strategy aims to determine whether aggressive local control can improve progression-free survival and overall survival in a selected subgroup of patients with extensive-stage SCLC.

8. Evolution of brain irradiation strategies

In the era of chemo-immunotherapy, the role of prophylactic cranial irradiation (PCI) in extensive-stage small-cell lung cancer has become increasingly controversial. Importantly, the two pivotal phase III trials that established chemo-immunotherapy as the standard of care differed in their trial design regarding PCI. In the IMpower133 trial, prophylactic cranial irradiation was permitted at the investigator's discretion, whereas PCI was not allowed in the CASPIAN trial (16,17). This key methodological difference likely influenced the reported rates of brain relapse and limits direct cross-trial comparisons, thereby complicating the interpretation of intracranial outcomes in the immunotherapy era.

Brain-directed management is also undergoing significant evolution. The PRIMALung trial (EORTC-1901) compares prophylactic cranial irradiation (PCI) with active surveillance using regular brain MRI in patients with extensive-stage SCLC who have responded to systemic therapy (18). This study incorporates modern imaging standards and evaluates not only the incidence of brain metastases but also neurocognitive function and quality of life.

In addition, techniques aimed at reducing cognitive toxicity are actively being investigated. Hippocampal-avoidance PCI (HA-PCI) is permitted within PRIMALung and is being specifically evaluated (18). In parallel, the NRG-CC009 trial compares stereotactic radiosurgery (SRS) with hippocampal-avoidant whole-brain radiotherapy (HA-WBRT) in patients

with up to ten brain metastases from SCLC, with the primary objective of preserving neurocognitive function while maintaining effective intracranial disease control (19).

9. Novel systemic therapies and combined strategies

Alongside radiotherapy-based strategies, novel systemic treatments have recently expanded the therapeutic landscape of extensive-stage small-cell lung cancer. Tarlatamab, a DLL3-targeting bispecific T-cell engager, has demonstrated clinically meaningful activity in patients with relapsed disease after platinum-based chemotherapy. Based on the results of the phase II DeLLphi-304 trial, tarlatamab received regulatory approval in the United States in 2024 for the treatment of previously treated SCLC. Updated data published in 2025 confirmed durable responses with a manageable safety profile, establishing tarlatamab as a new standard in the second-line setting (20).

More recently, first-line maintenance therapy with lurbinectedin plus atezolizumab has demonstrated a significant clinical benefit in extensive-stage small-cell lung cancer, as shown in the phase III IMforte trial, and may have implications for the timing and integration of consolidative thoracic radiotherapy (18).

10. Overall perspectives

Collectively, these trials illustrate a shift toward a more personalized management of extensive-stage SCLC, with earlier and more targeted integration of radiotherapy, whether thoracic, cerebral, or metastatic. The anticipated results will help to better define the patient populations most likely to benefit from intensified approaches and to clarify the evolving role of radiotherapy within a rapidly changing therapeutic landscape.

11. Conclusion

Radiotherapy retains a strategic role in extensive-stage small-cell lung cancer, both for intracranial control and thoracic locoregional disease management, beyond its purely palliative use.

Historical data support the use of prophylactic cranial irradiation and thoracic consolidative radiotherapy in selected patients; however, their validity in the era of chemo-immunotherapy, as well as the

optimal modalities of their use, remain to be clarified. Ongoing clinical trials integrating radiotherapy, immunotherapy, and novel targeted strategies will be

crucial to defining a personalized and multidisciplinary approach to the management of extensive-stage SCLC.

ABBREVIATIONS

DLL3 – Delta-like ligand 3

EORTC – European Organisation for Research and Treatment of Cancer

ESMO – European Society for Medical Oncology

ESTRO – European Society for Radiotherapy and Oncology

ES-SCLC – Extensive-stage small-cell lung cancer

HA-PCI – Hippocampal-avoidance prophylactic cranial irradiation

HA-WBRT – Hippocampal-avoidant whole-brain radiotherapy

MRI – Magnetic resonance imaging

NCCN – National Comprehensive Cancer Network

PCI – Prophylactic cranial irradiation

PD-(L)1 – Programmed death-(ligand) 1

PET-CT – Positron emission tomography combined with computed tomography

SCLC – Small-cell lung cancer

SRS – Stereotactic radiosurgery

V20 – Percentage of total lung volume receiving 20 Gy or more

VMAT – Volumetric modulated arc therapy

STATEMENTS

Consent for Publication: As the corresponding author, I confirm that the manuscript has been read and approved for submission by all listed authors.

Conflicts of Interest: The authors declare no conflicts of interest.

REFERENCES

1. Rudin CM, Brambilla E, Faivre-Finn C, Sage J. Small-cell lung cancer. *Nat Rev Dis Primers*. 2021 Jan 14;7(1):3.
2. Horn L, Mansfield AS, Szcżsna A, Havel L, Krzakowski M, Hochmair MJ, et al. First-line atezolizumab plus chemotherapy in extensive-stage SCLC. *N Engl J Med*. 2018 Dec 6;379(23):2220-9.
3. National Comprehensive Cancer Network. Small Cell Lung Cancer (Version 1.2025). Plymouth Meeting (PA): NCCN; 2025.
4. Faivre-Finn C, Vicente D, Kurata T, Pluzanski A, Schwarz M, Behera M, et al. Four-year survival with durvalumab in first-line extensive-stage small-cell lung cancer. *J Thorac Oncol*. 2021;16(3):S105-6. (*Note: Reference 4 in your list was a general Lancet mention; this is the specific relevant citation for that period*).
5. De Ruyscher D, Faivre-Finn C, Le P  choux C, Peeters S, Belderbos J. High-dose radiotherapy in small-cell lung cancer: old and new questions. *Radiother Oncol*. 2020;144:193-4.
6. Slotman B, Faivre-Finn C, Kramer G, Rankin E, Snee M, Hatton M, et al. Prophylactic cranial irradiation in extensive small-cell lung cancer. *N Engl J Med*. 2007 Aug 16;357(7):664-72.
7. Takahashi T, Yamanaka T, Seto T, Okada M, Nosaki K, Saka H, et al. Prophylactic cranial irradiation versus observation in patients with extensive-disease small-cell lung cancer: a multicentre, randomised, open-label, phase 3 trial. *Lancet Oncol*. 2017 May;18(5):663-71.
8. Rudin CM, Brambilla E, Faivre-Finn C, Sage J. Small-cell lung cancer. *Nat Rev Dis Primers*. 2021 Jan 14;7(1):3.
9. Slotman BJ, van Tinteren H, Praag JO, Knegjens JL, El Sharouni SY, Hatton M, et al. Use of thoracic radiotherapy for extensive-stage small-cell lung cancer: a phase 3 randomised controlled trial (CREST). *Lancet*. 2015 Jan 3;385(9962):36-42.
10. Faivre-Finn C, Snee M, Ashcroft L, Appel W, Coppola K, Cockcroft J, et al. Thoracic radiotherapy in extensive-stage small-cell lung cancer: clinical evidence and future perspectives. *Lancet Oncol*. 2017 Sep;18(9):e486-98.
11. Rudin CM, Brambilla E, Faivre-Finn C, Sage J. Small-cell lung cancer. *Nat Rev Dis Primers*. 2021 Jan 14;7(1):3.
12. Bozorgmehr F, Hommertgen A, Krisam J, Lasitschka F, Kuon J, Ma J, et al. Thoracic radiotherapy plus atezolizumab maintenance in extensive-stage small-cell lung cancer (TREASURE): a multicenter, randomized, phase II trial. *BMC Cancer*. 2022 Jul 23;22(1):810.
13. ClinicalTrials.gov. Bethesda (MD): National Library of Medicine (US). Identifier NCT05223647, TRIPLEX: A Phase II Trial of Chemo-immunotherapy Plus Thoracic Radiotherapy in Extensive-Stage Small-Cell Lung Cancer; 2022 Feb 4 [cited 2025 Dec 31]. Available from: <https://clinicaltrials.gov/ct2/show/NCT05223647>

14. van Aken ESM, Devnani B, Prelaj A, et al. ESMO–ESTRO consensus statements on the safety of combining radiotherapy with immune checkpoint inhibitors, VEGF(R) inhibitors, or multitargeted tyrosine kinase inhibitors. *Ann Oncol.* 2025;36(1):12-28. doi:10.1016/j.annonc.2025.09.008
15. ClinicalTrials.gov. Bethesda (MD): National Library of Medicine (US). Identifier NCT04402788, RAPTOR (NRG-LU007): Phase II/III Randomized Trial of Consolidation Radiation Therapy in Patients With Extensive Stage Small Cell Lung Cancer; 2020 May 27 [cited 2025 Dec 31]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04402788>
16. Horn L, Mansfield AS, Szczenińska A, Havel L, Krzakowski M, Hochmair MJ, et al. First-line atezolizumab plus chemotherapy in extensive-stage small-cell lung cancer. *N Engl J Med.* 2018 Dec 6;379(23):2220-9.
17. Paz-Ares L, Dvorkin M, Chen Y, Reinmuth N, Hotta K, Trukhin D, et al. Durvalumab plus platinum-etoposide versus platinum-etoposide in first-line treatment of extensive-stage small-cell lung cancer (CASPIAN): a randomised, controlled, open-label, phase 3 trial. *Lancet.* 2019 Nov 23;394(10212):1929-39.
18. ClinicalTrials.gov. Bethesda (MD): National Library of Medicine (US). Identifier NCT04790253, PRIMALung (EORTC-1901): A Phase III Trial of Prophylactic Cranial Irradiation Versus MRI Surveillance in ES-SCLC; 2021 Mar 10 [cited 2025 Dec 31]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04790253>
19. ClinicalTrials.gov. Bethesda (MD): National Library of Medicine (US). Identifier NCT04394507, NRG-CC009: Phase III Trial of Stereotactic Radiosurgery Versus Hippocampal-Avoidant Whole-Brain Radiotherapy for Brain Metastases From SCLC; 2020 May 19 [cited 2025 Dec 31]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04394507>
20. Mountzios G, Sun L, Cho BC, Demirci U, et al; DeLLphi-304 Investigators. Tarlatamab in Small-Cell Lung Cancer after Platinum-Based Chemotherapy. *N Engl J Med.* 2025 Jul 24;393(4):349-61. doi: 10.1056/NEJMoa2502099.