Lung cancer intracranial metastases treatment

- High-Dose Aumolertinib for Untreated EGFR-Variant Non-Small Cell Lung Cancer With Brain Metastases: The ACHIEVE Phase 2 Nonrandomized Clinical Trial
- The Efficacy and Safety of Brain Radiotherapy Combined With Immune Checkpoint Inhibitors (ICIs) for Small-Cell Lung Cancer (SCLC) Patients With Brain Metastases (BMs)
- Cesium-131 collagen tile brachytherapy for salvage of recurrent intracranial metastases
- Genomic profiling and prognostic factors of leptomeningeal metastasis in EGFR-mutant NSCLC after resistant to third-generation EGFR-tyrosine kinase inhibitors
- Identifying the genomic landscape of EGFR-mutant lung cancers with CNS metastases
- Precision medicine approaches to CNS metastatic disease
- Therapeutic Outcomes of Osimertinib in EGFR - Mutant Non-Small Cell Lung Cancer With Brain Metastases: Results From a Retrospective Study at Vietnam National Cancer Hospital
- Identification of alkynyl nicotinamide HSN748 as a RET solvent-front mutant inhibitor with intracranial efficacy

see Non-small cell lung cancer intracranial metastases treatment.

see Small cell lung cancer intracranial metastases treatment.

Systemic treatment of lung cancer patients with brain metastases is based on clinical (presence of symptomatic intracranial lesions), pathological and molecular characteristics of the disease. The efficacy of standard platinum-based chemotherapy is comparable inside and outside the brain, justifying its use as front-line therapy. The intracranial efficacy of targeted therapies (EGFR tyrosine kinase inhibitors, ALK inhibitors) is demonstrated, and is globally superior to the efficacy of standard chemotherapy, justifying their use as front-line therapy in case of EGFR activating mutation or ALK rearrangement (providing the change in the crizotinib label in France). The concomitant use of whole brain radiotherapy and a systemic treatment (chemotherapy or targeted therapy) is not recommended in the absence of a demonstrated better efficacy and/or acceptable safety profile. Several trials are ongoing to assess new whole brain radiotherapy modalities, new targeted therapies alone or in combination, especially exploring immunotherapy [1)].

Case series

Clinical outcomes following treatment using stereotactic radiosurgery (SRS) and fractionated stereotactic radiotherapy (SRT) for brain metastases from lung cancer in 67 patients with 109 brain metastases from lung cancer treated using CyberKnife between 1998 and 2011 were retrospectively analyzed. SRS (median dose, 24 Gy) was used to treat 79 lesions, and 3-fraction SRT (median dose, 30 Gy) was used to treat 30 lesions. The median follow-up time was 9.4 months (range, 0.4-125 months). The 1-year local control rate was 83.3%, and the 1-year distant brain failure rate was 30.1%. The median survival time was 13.1 months, and the 1- and 3-year overall survival (OS) rates were 54.8% and 25.9%, respectively. On multivariate analysis, three factors were found to be statistically significant predictors of OS: (i) presence of uncontrolled primary disease [hazard ratio (HR) = 3.04; P = 0.002]; (ii) Brinkman index (BI) ≥ 1000 (HR = 2.75; P = 0.007); and (iii) pulmonary metastases (HR = 3.54; P = 0.009). Radionecrosis and worsening of neurocognitive function after radiosurgery were observed in 5 (7%) and 3 (4%) patients, respectively. Our results indicated that SRS/SRT for brain

metastases from lung cancer was effective. Uncontrolled primary disease, high BI, and pulmonary metastases at treatment were significant risk factors for OS [2)].

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Barlesi F, Spano JP, Cortot AB, Carpentier AF, Robinet G, Besse B. [Systemic treatment of brain metastases from lung cancer]. Cancer Radiother. 2015 Feb;19(1):43-7. doi: 10.1016/j.canrad.2014.12.001. Epub 2015 Feb 2. Review. French. PubMed PMID: 25656857.
2)
Tamari K, Suzuki O, Hashimoto N, Kagawa N, Fujiwara M, Sumida I, Seo Y, Isohashi F, Yoshioka Y, Yoshimine T, Ogawa K. Treatment outcomes using CyberKnife for brain metastases from lung cancer. J Radiat Res. 2014 Oct 25. pii: rru092. [Epub ahead of print] PubMed PMID: 25344929.