

Adding radiation to chemotherapy may dramatically improve survival for advanced NSCLC

September 25 2017

Combining radiation therapy with chemotherapy for patients with limited metastatic non-small cell lung cancer (NSCLC) may curb disease progression dramatically when compared to NSCLC patients who only receive chemotherapy, according to a new randomized phase II clinical trial reported today at the 59th Annual Meeting of the American Society for Radiation Oncology (ASTRO). Progression-free survival in the trial escalated from 3.5 months to 9.7 months with the addition of radiation therapy delivered to all the metastatic sites of lung cancer as well as the primary disease site. Treatment-related side effects were similar for the two treatment approaches.

Lung cancer claims the most cancer-specific deaths of any tumor type. Few existing treatments offer durable survival benefits for patients whose NSCLC has spread past the lungs, due in part to the aggressive nature of [lung cancer](#) and its propensity to progress, even following treatment. Research on [metastatic colorectal cancer](#) and sarcoma, however, suggests a potential benefit from adding local [therapy](#)—treatment directed specifically at the tumor cells—to the standard approach of [systemic therapy](#). In these studies, adding [radiation](#) or/and surgery bolstered the ability of systemic therapies, such as [chemotherapy](#), to control disease and improve survival in patients with few metastases.

"Even in the era of immunotherapy, there are not large numbers of metastatic NSCLC patients with durable responses to systemic therapy.

In our trial, however, the addition of radiation therapy directed at each of the cancerous areas greatly improved how patients responded to subsequent rounds of chemotherapy," said Puneeth Iyengar, MD, PhD, lead author of the study and an assistant professor of radiation oncology at the University of Texas Southwestern Medical Center in Dallas. "This finding suggests that local treatments, including radiation, could work in concert with chemotherapy to prolong the amount of time before recurrence occurs in patients with limited sites of metastatic NSCLC."

The study was a randomized phase II trial testing whether the addition of local treatment, in the form of consolidative radiation therapy, to the standard treatment of systemic therapy improved progression-free survival for patients with limited metastatic NSCLC. Eligible patients included those with stage IV disease, spread to six or fewer sites including the primary tumor site, and who responded at least partially to first-line/induction chemotherapy.

Patients were randomly assigned to receive either maintenance chemotherapy alone (15 patients) or a combination of stereotactic ablative radiotherapy (SAbR)—also known as stereotactic body radiation therapy or SBRT—to all sites of disease followed by maintenance chemotherapy (14 patients). Radiation to metastases was offered as a single fraction (to 21-27 Gray (Gy)), three fractions (to 26.5-33 Gy) or five fractions (to 30-37.5 Gy) of SAbR (regimens were biologically equivalent). Radiation to the primary disease site was delivered via SAbR where possible, or through 15 fractions of hypofractionated radiation therapy if the primary tumor was too central or involved mediastinal nodes. Maintenance chemotherapy was left to the discretion of the treating medical oncologists and consisted of pemetrexed, docetaxel, erlotinib or gemcitabine.

Twenty-nine patients were accrued between April 2014 and July 2016. The median patient age was 70 years (range 51-79 years) for the patients

receiving maintenance chemotherapy only and 63.5 years (range 51-78) for the patients receiving SAbR to metastases followed by maintenance chemotherapy. Most patients were male (69%). Eighty-six percent of all patients had tumors with non-squamous histologies. Thirty-one lesions were treated with radiation in the 14 patients that received local therapy.

The median follow-up for this report was 9.6 months (range 2.4-30.2 months). Patient accrual was stopped ahead of schedule after an unplanned interim analysis found substantially improved survival rates in the arm receiving local therapy, matching similar findings in a parallel trial.

The interim analysis found a median progression-free survival rate of 9.7 months with consolidative radiation therapy followed by chemotherapy, versus 3.5 months for maintenance chemotherapy alone ($p = 0.01$; Hazard Ratio (HR) = 0.304, 95% CI 0.113-0.815). Survival rates were estimated using the Kaplan-Meier method and compared using the log-rank test and Cox proportional hazard models.

Specifically, rates of local control and delay in distant metastases also favored the approach incorporating radiation with systemic therapy. In the arm with consolidative local therapy, there were no recurrences in original sites of gross disease versus seven failures in original sites of gross disease in the arm receiving only maintenance therapy. At the time of analysis, 10 of the 15 patients receiving maintenance chemotherapy-only had progressed, compared with four of the 14 patients also receiving radiation. None of the recurrences among the latter patients were in areas treated directly with [radiation therapy](#).

Treatment-related side effects were similar between the two treatment arms, indicating that the addition of local therapy was well-tolerated by patients. There were no grade 5 toxicities attributable to study treatment. On the maintenance chemotherapy-only arm, there were two grade 3 and

one grade 4 toxicities. On the SAbR plus maintenance chemotherapy arm, there was one grade 4 toxicity.

"These findings verify that progression-free survival for limited metastatic disease really is no different than it is for widely metastatic disease, suggesting that local therapy could play an important future role in survival outcomes," said Dr. Iyengar. "Moreover, the addition of consolidative radiation did not increase toxicity, which allowed patients to continue on to additional systemic therapy that is important to controlling aggressive metastatic disease."

Next steps for this research include a larger, randomized phase III trial to test progression-free survival, as well as overall survival. While results indicate a clear benefit of adding local therapy for the management of limited metastatic NSCLC, Dr. Iyengar stressed the need for confirmation in a larger prospective trial.

"There is a significant possibility that local therapy, such as consolidative radiation, may become an important part of the management of limited metastatic NSCLC patients, but this validation must take place in randomized phase III studies. Interested [patients](#) should seek more information about the ongoing NRG LU 002 and SARON trials."

Provided by American Society for Radiation Oncology

Citation: Adding radiation to chemotherapy may dramatically improve survival for advanced NSCLC (2017, September 25) retrieved 8 May 2024 from <https://medicalxpress.com/news/2017-09-adding-chemotherapy-survival-advanced-nsclc.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--