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### Lung RFA shows long-term survival benefits

Data in the April issue of *Radiology* validate radiofrequency ablation as a safe and effective treatment alternative for inoperable patients with lung cancer. The study, the largest and longest to date, also suggests RFA provides better survival and disease control in these patients than does external-beam radiotherapy.

"We can provide meaningful survival even in patients who are not surgical candidates due to advanced age or medical frailty," said coauthor Dr. Damian E. Dupuy, an interventional radiologist and professor of diagnostic imaging at Brown University Medical School.

Dupuy and colleagues retrospectively evaluated results from 153 patients who underwent CT-guided RFA for 189 inoperable lung carcinomas, including 116 primary lesions and 73 colorectal metastases. Most patients (age range: 17 to 94) suffered from severe cardiopulmonary disease. The investigators found that patients with small early-stage tumors treated with RFA showed long-term outcomes that were similar to or better than those historically achieved by external-beam radiation.

Outcomes were in some cases even better than those recorded by the surgical literature, according to Dupuy. The researchers recorded the following results.

Overall survival rates:

- one year, stage I non-small cell lung cancer, 78%, colorectal metastases, 87%
- two years, 57% and 78%, respectively
- three years, 36% and 57%
- four years, 27% and 57%
- five years, 27% and 57%

Tumor progression-free rates:

- one year, tumors 3 cm or smaller, 83%, tumors larger than 3 cm, 45%

- two years, 64% and 25%, respectively
- three years, 57% and 25%
- four years, 47% and 25%
- five years, 47% and 25%

The relationship between survival curves and tumor size was statistically significant ( $p < .002$ ).

A Swedish metastudy of data published between 1988 and 2000 on inoperable patients with stage I non-small cell carcinoma treated with external-beam radiation found that small tumor size, early disease stage, and increased dose had a favorable impact on local control and increased survival. Treatment outcomes, however, showed the three- and five-year overall survival rates were 34% and 21%, respectively (Lung Cancer 2003;41[1]:1-11).

Top RFA-related complications included pneumothorax (28.4%), hemoptysis (2.7%), and infection (2.2%). The overall 30-day mortality rate was 3.9% (2.6% RFA-specific).

Most patients -- particularly those with colorectal and advanced disease -- also underwent chemotherapy, making it hard to estimate RFA's individual effect. Findings from similar studies, however, suggest a combined local-systemic treatment approach could bolster survival. The one- to five-year survival rates from colorectal metastases in this study proved encouraging, according to the researchers.

The study had other limitations, including inadequate recurrence detection protocols, lack of histopathologic confirmation at follow-up, and survival analysis that was not disease-specific. The investigators also warn that RFA-related survival rates should be distinguished from overall lung cancer survival. In most cases, there is a considerable lag time between initial cancer diagnosis and RFA treatment. This underscores the importance of educating members of the referral community, who may not know of this treatment option for their sickest and most elderly patients.

The investigators concluded that results from properly designed randomized multicenter trials should elucidate RFA's ultimate role in this setting.

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-- By H. A. Abella

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