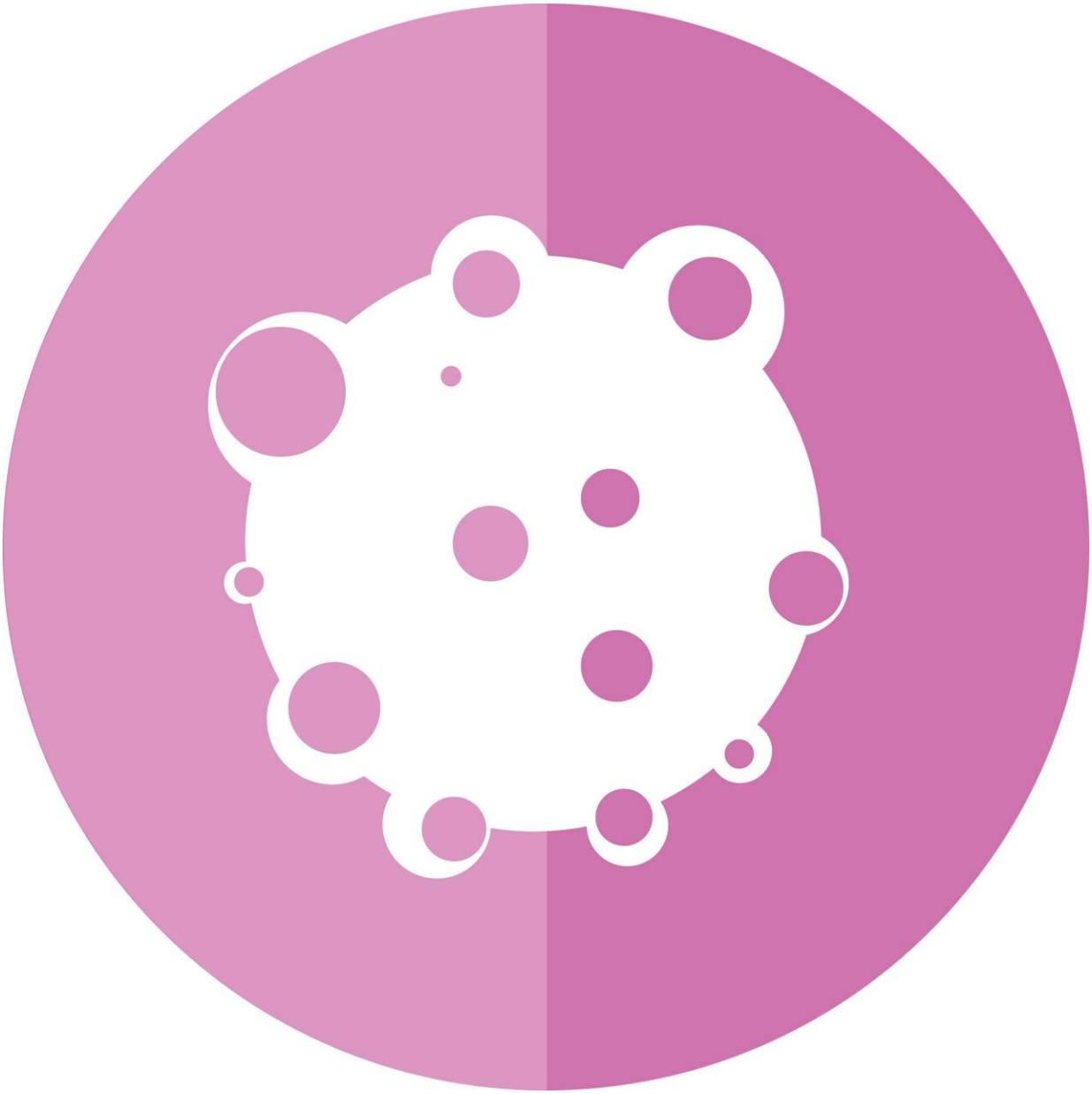
Long-term benefit of SABR for operable early-stage NSCLC shown in new study

September 14 2021



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A new study from researchers at The University of Texas MD Anderson Cancer Center showed that stereotactic ablative radiotherapy (SABR) was as effective as surgery at providing long-term benefits to patients with operable early-stage non-small cell lung cancer (NSCLC) and generated minimal side effects. The study is the first of its kind to compare long-term results of SABR against surgical treatment in patients with operable early-stage NSCLC.

The findings from the single-arm, non-randomized STARS trial—led by Joe Chang, M.D., Ph.D., professor of Radiation Oncology, and Jack Roth, M.D., professor of Thoracic and Cardiovascular Surgery—were published today in *The Lancet Oncology*.

SABR is treatment that concentrates intense doses of radiation on a specific tumor site without damaging surrounding healthy tissue. It is used as standard treatment for inoperable early-stage NSCLC. Due to its effectiveness, convenience and noninvasiveness, there is growing interest in exploring SABR as a treatment for patients with operable diseases.

"After surgical resection, recovery may be prolonged and there can be significant loss of lung function depending on the amount of lung removed," Chang said. "However, SABR functions as a non-invasive 'knife' to eliminate cancer with minimal side effects. Patients are treated in 30 minutes as an outpatient procedure, and they can return home or even work the same day after therapy is delivered. Lung function is preserved."

The study builds on the pooled analyses of two randomized studies (STARS and ROSEL trials), published in 2015, that investigated the

advantages of SABR versus a surgical procedure called video-assisted thoracoscopic surgical lobectomy with mediastinal lymph node dissection (VATS L-MLND).

For the current study, the researchers enrolled 80 newly diagnosed patients with early-stage NSCLC with tumor sizes 3 cm or smaller from Sept. 1, 2015, through Jan. 31, 2017, and compared their results to propensity-matched patients undergoing surgery during the same time period. The final follow-up was Sept. 30, 2020, with a median follow-up of 5.1 years.

The results showed that the overall survival (OS) rates of the SABR and surgical cohorts were not significantly different. The SABR and surgical cohorts both achieved a three-year OS rate of 91%. The five-year OS rate was 87% in the SABR arm versus 84% in the surgical arm.

The progression-free survival (PFS) rates also were similar. The three-year PFS rate was 80% for the SABR group versus 88% for the surgical group, while the five-year PFS rate was 77% versus 80%, respectively. SABR was well-tolerated, with no grade 4-5 toxicity. Only one case (1.3%) of grade 3 dyspnea was reported.

Overall, these findings illustrate that SABR and VATS L-MLND surgery achieved similar outcomes, Chang said. Both were effective in extending OS and PFS, but SABR is a less invasive procedure and may be more beneficial for certain patients.

"While surgical resection provides additional information about mediastinal lymph node involvement, the procedure is associated with significant side effects and complications," Chang said. "Considering much lower treatment-related side effects and complications as compared with surgery, non-invasive SABR can offer patients a much better quality of life, particularly for senior patients or those with co-

morbidities."

While SABR remains a promising treatment option for patients with operable early-stage NSCLC, multidisciplinary management is strongly recommended.

"Further study is needed to better understand who benefits most from surgery versus SABR, because both treatment options achieve local control in early-stage lung cancer," Chang said. "The future question is how to further reduce lymph node and distant recurrence for these patients."

Chang and his team currently are working on a randomized study to compare SABR with SABR and anti-PD-1 immunotherapy (I-SABR study) combined, particularly for patients with larger tumors, isolated recurrences or multi-primary lung cancer.

The study was funded by grants from Varian Medical Systems and the National Institutes of Health.

More information: Joe Y Chang et al, Stereotactic ablative radiotherapy for operable stage I non-small-cell lung cancer (revised STARS): long-term results of a single-arm, prospective trial with prespecified comparison to surgery, *The Lancet Oncology* (2021). DOI: 10.1016/S1470-2045(21)00401-0

Provided by University of Texas M. D. Anderson Cancer Center