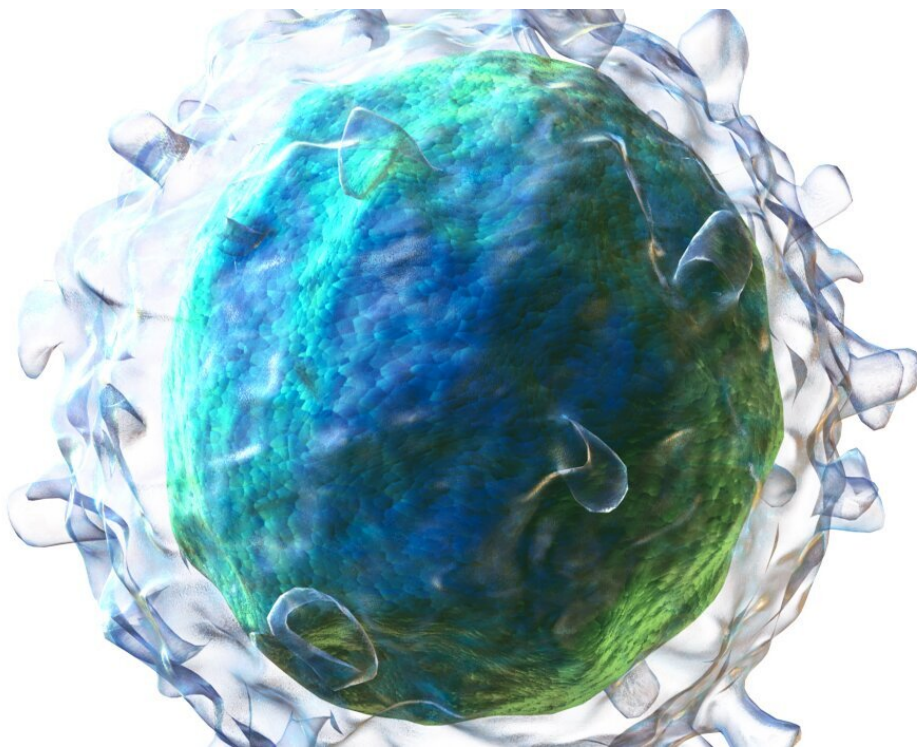


Ultra-low dose radiation achieves complete response in 90% of patients with orbital indolent B-cell lymphomas

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3D rendering of a B cell. Credit: Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014". WikiJournal of Medicine 1 (2).

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Using a novel response-adapted ultra-low dose radiation therapy strategy, researchers at The University of Texas MD Anderson Cancer Center

observed a 90% complete response rate in patients with orbital indolent B-cell lymphoma. Results were presented today at the 2022 American Society for Radiation Oncology (ASTRO) Annual Meeting.

This study, led by Chelsea C. Pinnix, M.D., Ph.D., associate professor of Radiation Oncology, is the first to prospectively examine the use of a response-adapted strategy in this setting, allowing [patients](#) who have a complete response to ultra-low [radiation](#) doses—4 Gray (Gy) in two fractions—to forego the higher standard doses. The treatment was associated with limited side effects, suggesting the response-adapted approach could improve quality of life without limiting efficacy.

"We are thrilled for our patients that we observed such high complete response rates when using this response-adapted strategy," Pinnix said. "The vast majority of patients were able to avoid additional radiation doses, which minimizes potential orbital toxicity commonly associated with current standard doses."

Indolent B-cell lymphoma includes mucosa-associated [lymphoid tissue](#) (MALT) lymphoma, follicular lymphoma and unclassifiable B-cell lymphoma. Traditionally, patients have received higher doses of radiation, ranging from 24—30 Gy, which can result in significant acute and long-term toxicity to the orbital region, or the area surrounding the eyes and related organs. Due to concerns for toxicity, some physicians have opted to observe patients with recently diagnosed indolent B-cell lymphoma of the orbit instead of proceeding with immediate radiation therapy.

In this Phase II trial, researchers aimed to achieve the same disease outcomes when using a response-adapted radiation therapy strategy as opposed to the standard upfront dose of 24 Gy. Patients were treated with 4 Gy in two fractions, and their responses were assessed at three-month intervals. Those who did not have a complete response to the

initial ultra-low dose were offered treatment with 20 Gy to complete the standard dose of 24 Gy of radiation. Patients who experienced a complete response after the ultra-low dose were observed.

The trial included 50 evaluable patients with stage I to stage IV orbital indolent B-cell lymphomas. The participants' median age was 63 years, and 62% of participants were female. Most patients (62%) had stage I disease in one or both orbits. Sixty-four percent of participants had MALT lymphoma, 32% had [follicular lymphoma](#) and 12% had low-grade B-cell lymphoma.

In a planned subset analysis of patients with newly diagnosed stage I MALT lymphoma, researchers observed a two-year local control rate of 91%. At two-year evaluation, 95% of these patients had not experienced a distant recurrence of disease.

In the study, treatment-related side effects were limited. Three patients (6%) experienced grade 1 dry eye, and there were no grade 3 or higher toxicities.

"Ultra-low dose radiation therapy for orbital grade lymphomas is not only effective, it can potentially be more convenient and less costly for patients. And it really makes sense for the ocular and periocular region given the concerns for toxicity to the eye from higher doses of radiation," said study co-investigator Bitá Esmaeli, M.D., professor of Plastic Surgery.

Researchers also conducted a retrospective study in a separate cohort of 55 patients who were treated with the same response-adapted ultra-low dose strategy. At a median follow-up of 37.3 months, 98% of patients had a complete response to the response-adapted radiation therapy strategy, with only two patients receiving an additional 20 Gy prior to experiencing a complete response.

"Due to these promising results, this novel response-adapted ultra-low dose radiation therapy approach is the current standard of care for MD Anderson orbital MALT [lymphoma](#) patients, regardless of disease stage," Pinnix said. "The approach also has been adopted at other centers with encouraging early results."

More information: Conference: [www.astro.org/Meetings-and-Edu ... /2022/Annual-Meeting](http://www.astro.org/Meetings-and-Education/2022/Annual-Meeting)

Conference abstract: [plan.core-apps.com/myastroapp2 ... 24-b0ed-a21e7d349466](https://plan.core-apps.com/myastroapp2/24-b0ed-a21e7d349466)

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

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