New study to learn from every cancer patient treated with magnetic resonance radiation therapy

The MOMENTUM study is a transformative approach to evaluating innovative medical technology

Today, the international MR-linac Consortium announced the launch of the MOMENTUM study. The study is designed to generate data that enable safe, fast and, above all, 'evidence-based' introduction of magnetic resonance radiation therapy (MR/RT) into clinical practice. The MOMENTUM study represents the next step in the development of the Elekta Unity MR/RT system; the study will be focused on building a robust body of real-world clinical evidence and insights made possible by this technology. Information gained through the MOMENTUM study will guide the use of MR/RT to improve outcomes for cancer patients.

“Each treatment session on this innovative system is an opportunity to gain insight into the benefits that this technology provides and, critically, to determine which patients benefit from MR/RT therapy,” said Dr. Helena Verkooijen, Professor of Evaluation of Innovation at University Medical Center Utrecht (UMCU) and a member of MOMENTUM's Management team.

Radiotherapy is an important component many cancer treatment regimens and approximately 50% of all cancer patients receive radiation during their treatment journey. As with most medical therapies for cancer, radiotherapy is associated with short- and long-term side effects that can be treatment-limiting and/or reduce patients' quality of life during and after therapy. Many of these side effects result from radiation-related damage to healthy tissue. The MR-linac system is designed to address this challenge by allowing improved targeting of radiation to the tumor and reduced exposure of nearby tissues and organs.

Dr. William Hall, Assistant Professor of the Department of Radiation Oncology at the Medical College of Wisconsin noted. “We believe that this kind of rigorous and coordinated approach has tremendous potential to improve patient outcomes and change radiotherapy.”

Cancer centers participating in MOMENTUM will ask patients if they are willing to share de-identified information about their treatment and subsequent experience, including tumor control rates and quality of life. This information will be aggregated into repositories that will allow researchers to assess outcomes, enhance the product and evaluate alternative treatment approaches.

“The MR-linac Consortium includes some of the world’s most talented and dedicated cancer researchers,” said Dr. John Christodoulou, Vice President of Medical Affairs and Clinical Research at Elekta and a member of MOMENTUM’s management team. “By collaborating on the MOMENTUM Study, we expect to accelerate clinical innovations enabled by this breakthrough technology.”

Elekta Unity makes it possible to visualize the tumor with high-resolution images during treatment through combining high-field MRI technology with a linear accelerator. This allows extremely precise delivery of the radiation dose, enabling higher dosing to the tumor bed while better sparing the surrounding healthy tissues. While this is expected to lead to better tumor control and fewer side effects it is crucial to show that the advanced technical capabilities of MR/RT translate into real benefits for the patient, such as prolonged disease-free survival and better quality of life.
The innovative MR-linac technology, a Dutch invention, was developed by Elekta in collaboration with the MR-linac Consortium, which comprises experts in oncology, radiation therapy, epidemiology and medical physics from leading cancer centers around the world. 

*Elekta Unity has CE-mark and 510(k) clearance but is not commercially available in all markets.*

1https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3298009/

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**About the MR-Linac Consortium**

The MR-linac Consortium is a collaborative industrial-academic partnership that Elekta founded with seven centers and our technology partner, Philips in 2012 to provide an evidence-based introduction of the MR-linac to the medical community, and to support the advancement of the technology. The institutions that participated are: (Founding members) University Medical Center Utrecht, the Netherlands; The Netherlands Cancer Institute-Antoni van Leeuwenhoek Hospital, the Netherlands; The University of Texas MD Anderson Cancer Center, USA; the Institute of Cancer Research, working with its clinical partner The Royal Marsden NHS Foundation Trust, UK; Froedtert & the Medical College of Wisconsin Clinical Cancer Center at Froedtert Hospital, USA; The Christie NHS Foundation Trust, UK; Odette Cancer Centre, Sunnybrook Health Sciences Centre, Canada. Lygature, The Netherlands, provides the public-private partnership management of the MOMENTUM study.