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For Immediate Release

**HKSH Medical Group Announces World's First Study on
Multi-Target, Real-Time Stereotactic Total Ablative Radiotherapy
with MR-LINAC for Oligometastatic Prostate Cancer
Achieving 100% 3-Year Survival Rate without Severe Side Effects**

(23 October 2025, Hong Kong) HKSH Medical Group (HKSH) is proud to announce the world's first clinical study on stereotactic total ablative radiotherapy (STAR) with an MR-guided linear accelerator (MR-LINAC) for oligometastatic prostate cancer (OMPC). This study involved patients with advanced metastatic prostate cancer, utilising real-time motion tracking and precise image-guidance technology to target multiple tumour sites simultaneously. Participants underwent five sessions of “hypofractionation” radiotherapy, achieving outstanding results: a 100% three-year survival rate, over 95% achieving sustained disease control, and only mild side effects reported. As the first clinical study of its kind worldwide, this breakthrough provides new treatment options for advanced prostate cancer patients, reducing the burden and inconvenience of therapy while significantly improving quality of life. The findings were published in the July 2025 issue of the academic journal *Frontiers in Oncology*.*

Precise Evaluation of Advanced OMPC

Prostate cancer is the third most common cancer among men in Hong Kong. Due to the absence of obvious early symptoms, many patients are only diagnosed at an intermediate or advanced stage. According to data from the Hong Kong Cancer Registry, the five-year relative survival rate for advanced prostate cancer is less than 50%. However, advanced prostate cancer can be further classified into “oligometastatic” and widespread metastatic disease. OMPC refers to cases where the spread is limited, involving only a small number of metastatic sites and organs. Therefore, the metastatic situations in late-stage prostate cancer cases are not all the same. With accurate assessment of the extent of metastasis, the chances of achieving effective disease control can be greatly improved.

To evaluate the scope and severity of metastasis, Prostate-Specific Membrane Antigen PET scanning (PSMA-PET) plays a critical role. Using a radiotracer that binds to proteins on the surface of prostate cancer cells, PSMA-PET offers exceptional sensitivity in detecting cancer spread. When combined with CT imaging, it enables the identification of OMPC cells that were previously difficult to detect. This advancement allows for earlier and more targeted treatment for patients showing initial signs of metastasis, significantly improving the effectiveness of disease management.

“5+5 Precision Therapy” – High-Dose Radiation for Five Targets in Five Sessions

The first-line treatment for prostate cancer is mainly systemic hormone therapy. However, relying solely on medication often leads to drug resistance, with cancer cells becoming active again, resulting in recurrence and further spread to major organs. STAR offers a more proactive approach, combining stereotactic precision with simultaneous high-dose radiotherapy to target multiple lesions in a single session. This strategy significantly reduces the number of treatments required while enhancing therapeutic outcomes.

Conducted between 2020 and 2023, this study involved 43 patients with advanced prostate cancer aged between 46 and 93. All participants had oligometastatic disease, characterised by limited metastases—five lesions or less—with the spread confined to areas such as parts of the lymph nodes or pelvic region. **Dr. Darren POON, Associate Director of HKSH Comprehensive Oncology Centre and Specialist in Clinical Oncology**, who led the study, explained, “The greatest advantage of MR-guided stereotactic radiotherapy is its ability to narrow the tumour treating fields precisely, delivering high doses of radiation directly to cancer cells. This minimises unnecessary radiation exposure, reduces damage to surrounding healthy tissues, and results in relatively mild side effects.” Conventional radiotherapy,

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on the other hand, typically involves multiple low-dose sessions targeting individual points to avoid harming nearby healthy tissues, such as the bowel and bladder. It may require up to 10 to over 30 treatment sessions and possibly leave part of the tumours untreated in order to prevent severe damage to adjacent important tissues or organs.

World's First Clinical Study by HKSH: 100% Three-Year Survival Rate

Dr. Poon further elaborated, “One of the key breakthroughs in this study is the ability of stereotactic radiotherapy to deliver high-dose radiation to five metastatic sites simultaneously. Patients typically need only five treatment sessions over the course of two to three weeks, effectively achieving a “hypofractionation” treatment strategy. With stereotactic radiotherapy, up to five metastatic tumours can be treated and completely ablated in one single session. All OMPC patients in the study completed five sessions of STAR, with a median follow-up period of 36.5 months (ranging from 15.4 to 57.6 months). The survival data in the study is highly promising, with a 100% three-year overall survival rate and a 95.2% three-year progression-free survival rate. The conditions of some patients have remained stable for nearly five years post-treatment with no signs of recurrence. To further minimise the risk of recurrence, patients continue hormone therapy to control their condition.” The treatment strategy has now been fully adopted into clinical practice at HKSH and is recommended for suitable patients with advanced OMPC.

HKSH utilises MR-LINAC technology to perform stereotactic radiotherapy, offering significantly higher soft tissue contrast compared to conventional imaging techniques. **Mr. Wyman LI, Chief Operating Officer of HKSH Medical Group and Director of Hong Kong Sanatorium & Hospital**, remarked, “HKSH has been at the forefront of applying MR-LINAC technology in Asia. Since implementing MR-LINAC in 2019, we have actively conducted numerous clinical studies. HKSH published Asia’s first MR-LINAC clinical study for localised prostate cancer in 2022 and now we have achieved another breakthrough to strive for the best possible treatment outcomes for patients.” When HKSH was preparing to introduce the MR-LINAC technology in 2018, it became the first member in Asia invited to join the MR Linac Consortium, a global research alliance, collaborating and exchanging knowledge with over 40 medical institutions worldwide. This reflects HKSH’s dedication not only to adopting cutting-edge technologies but also pushing the boundaries to broaden their applications. By leveraging our clinical expertise, HKSH actively collaborates with medical equipment manufacturers, contributing valuable insights to drive the continuous advancement of healthcare technology.

Patient Sharing – Mr. Poon

Mr. Poon, aged 58, an insurance professional with strong health awareness, had consistently undergone regular health check-ups but temporarily ceased his routine screenings during the pandemic. Resumed regular check-ups after the pandemic and, without any symptoms, he was found to have an elevated Prostate-Specific Antigen (PSA) level of over 5 ng/mL (normal value: below 4 ng/mL). Initially, he was prescribed with anti-inflammatory medication, but a follow-up test three months later revealed that his PSA level had surged to over 10.

Subsequent PSMA PET scans confirmed a diagnosis of advanced prostate cancer, classified as a highly aggressive form. The cancer had metastasised to five sites, including the thoracic spine, bones, and lymph nodes. After consulting a specialist in clinical oncology, Mr. Poon was diagnosed with OMPC, and his condition was suitable for STAR with MR-LINAC to target all five metastatic sites simultaneously. Understanding the seriousness of his condition, he appreciated that STAR could deliver high-dose radiation using a “hypofractionation” approach to precisely eliminate cancer cells so he began treatment in March 2021 without hesitation. Reflecting on his experience, he shared, “The treatment was much easier than I expected. During the five radiotherapy sessions, I only felt mild fatigue and didn’t need to stop working. With a positive attitude, treating cancer isn’t as daunting as it seems.” Following treatment, Mr. Poon continued to excel in his career and, to this day, has experienced no serious discomfort or side effects.

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Patient Sharing – Mr. Fung

Mr. Fung, aged 69, another participant in the study, began experiencing symptoms about four years ago, including urinary urgency, nocturia, and frequent urination. Thinking these issues were merely age-related prostate enlargement, he did not suspect cancer. With encouragement from his wife to seek medical advice, tests revealed his PSA level was alarmingly high at 54 ng/mL. Subsequent CT scans and biopsies confirmed a diagnosis of advanced prostate cancer, which had metastasised to his lymph nodes and bones, with five sites of disease identified.

Initially, his doctor recommended surgery followed by 28 sessions of radiotherapy. However, Mr. Fung was hesitant about the frequent and lengthy treatment schedule and worried about potential side effects. After consulting a specialist in clinical oncology, he learnt that his condition could be managed with just five sessions of STAR using MR-LINAC, followed by hormone therapy to prevent recurrence. He then participated in the study and began treatment in September 2022.

After completing the treatment, Mr. Fung noted that it was far more manageable than he had anticipated. He acknowledged that with advancement in precision cancer therapies, even late-stage prostate cancer can be effectively treated with fewer sessions and ideal outcomes. Mr. Fung continues with regular follow-ups and remains symptom-free. In his leisure time, he enjoys hiking with his wife, leading a healthy retirement life.

*The study is published in *Frontiers in Oncology*, Poon et al, 2025 Jul.

www.frontiersin.org/journals/oncology/articles/10.3389/fonc.2025.1607610/full

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About HKSH Medical Group

Officially launched in September 2017, HKSH Medical Group promotes public health and advanced medicine through a multi-faceted, coordinated approach across clinical services, medical education, scientific research and public health education. Members of the Group, including Hong Kong Sanatorium & Hospital, HKSH Healthcare, HKSH Eastern Medical Centre and HKSH Cancer Centre, are dedicated to offering top-quality holistic care to patients.

Established in 1922, Hong Kong Sanatorium & Hospital is one of the key members of HKSH Medical Group and a leading private hospital in Hong Kong. Living up to its motto of 'Quality in Service, Excellence in Care', the Hospital is committed to serving the public as well as promoting medical education and research.

For more information about HKSH Medical Group, please visit <http://www.hksh.com>.

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Photo captions:



1. **Mr. Wyman LI, Chief Operating Officer, HKSH Medical Group and Director, Hong Kong Sanatorium & Hospital (3rd from right), Dr. Darren POON, Associate Director, HKSH Comprehensive Oncology Centre and Specialist in Clinical Oncology (3rd from left), Dr. Joseph CHAN, Chief Medical Officer, HKSH Medical Group and Deputy Medical Superintendent, Hong Kong Sanatorium & Hospital (2nd from right) and Dr Ben YU, Head of Medical Physics Department, HKSH Medical Group (2nd from left) announced the world's first clinical study on stereotactic total ablative radiotherapy with MR-LINAC for oligometastatic prostate cancer.**



2. HKSH utilises MR-Linac technology to perform stereotactic radiotherapy enabling accurate targeting of tumour sites, with high-dose radiation on the tumour while minimising harm to surrounding healthy tissues. Even when radiotherapy is conducted simultaneously at multiple locations, it will unlikely lead to severe side effects, greatly enhancing treatment efficacy.

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3. **Mr. Wyman LI, Chief Operating Officer of HKSH Medical Group and Director of Hong Kong Sanatorium & Hospital**, stated that since implementing Asia's first MR-LINAC in 2019, HKSH has been at the forefront of applying this technology. HKSH has conducted numerous clinical studies and applied enhanced technology to achieve optimal therapeutic outcomes for patients.



4. **Dr. Darren POON, Associate Director of HKSH Comprehensive Oncology Centre and Specialist in Clinical Oncology**, highlighted that a key breakthrough of this study lies in its 'hypofractionation' treatment strategy, which enables simultaneous treatment of up to five metastatic tumour sites. Patients typically need only five treatment sessions over the course of two to three weeks, combined with subsequent hormone therapy, significantly improving their quality of life.

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5. Two patients participating in the study, **Mr. POON** (left) and **Mr. FUNG** (right), shared their journeys. **Mr. FUNG** pointed out that quality of life was his primary consideration when choosing a treatment, which is why he opted for a radiation therapy plan that required only five sessions. The precise treatment plan also allowed **Mr. POON** to continue his career during the treatment period. He was able to work and live as usual without experiencing severe side effects.

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