

THE EARLY EXPERIENCE OF SYNCHRONY® IN ULTRA- HYPOFRACTIONATION FOR PROSTATE CANCER: A CASE SERIES

Authors:

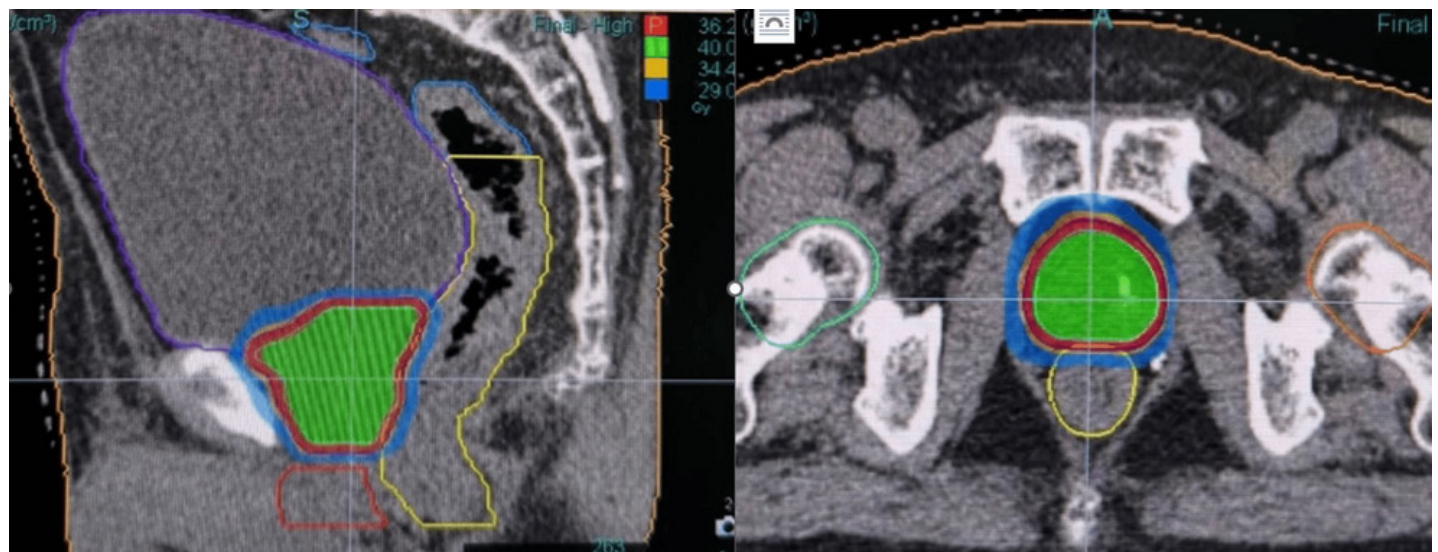
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Purpose:

This case series investigates the **early real-world performance** of **Synchrony® real-time motion tracking** during ultra-hypofractionated prostate radiotherapy on the **Radixact® System**.

Study Design:

Number of Patients	5 men with localized prostate cancer (3 favourable inter-mediate risk, 1 unfavourable intermediate risk, 1 N/A); 80% of patients received concurrent ADT
Motion Management Technique	Synchrony real-time tracking with automatic beam pauses if thresholds exceeded. Three gold fiducials implanted transperineally under ultrasound guidance
Planning	3 mm isotropic CTV-to-PTV margin; VOLO™ Ultra used for dose optimization
Treatment	SBRT with 36.25 Gy in 5 fractions, using criteria adapted from the PACE-B trial. Daily helical kVCT using ClearRT® for initial patient setup via fiducial marker matching



Example dose distribution for ultra-hypofractionated prostate cancer treatment

Key Findings:

Dosimetry	All patients met target coverage; two cases slightly exceeded bladder/rectum dose constraints
Treatment Efficiency	Mean beam-on time increased by 13.9% due to motion-related pauses; average beam-on time 586.52 s
PSA Response	Rapid decline, averaging -4.27 ng/mL/month
Toxicity	Median follow-up 2 months. Only one patient experienced Grade 1 GI toxicity (diarrhea), which resolved with supportive care

Conclusion:

“Synchrony successfully enhances ultra-hypofractionated prostate radiotherapy by providing dynamic motion management throughout treatment delivery... This operational approach supports both therapeutic effectiveness — as evidenced by rapid biochemical response — and an excellent safety profile, confirming its value in optimizing prostate ultra-hypofractionation delivery.”

Toapichattrakul P, Muangwong P, Kongs A, et al. (May 18, 2025) The Early Experience of Synchrony in Ultra-Hypofractionation for Prostate Cancer: A Case Series. Cureus 17(5): e84323. doi:10.7759/cureus.84323

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Important Safety Information:
Most side effects of radiotherapy, including radiotherapy delivered with Accuray systems, are mild and temporary, often involving fatigue, nausea, and skin irritation. Side effects can be severe, however, leading to pain, alterations in normal body functions (for example, urinary or salivary function), deterioration of quality of life, permanent injury, and even death. Side effects can occur during or shortly after radiation treatment or in the months and years following radiation. The nature and severity of side effects depend on many factors, including the size and location of the treated tumor, the treatment technique (for example, the radiation dose), and the patient's general medical condition, to name a few. For more details about the side effects of your radiation therapy, and to see if treatment with an Accuray product is right for you, ask your doctor. Accuray Incorporated as a medical device manufacturer cannot and does not recommend specific treatment approaches. Individual results may vary.