

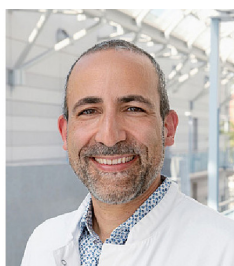
PROF. DR. PIRUS GHADJAR ON

THE HYPERPLAN[®] SOFTWARE

Charité - Universitätsmedizin Berlin and Dr. Sennewald Medizintechnik GmbH have been working closely together for several years on the development of HyperPlan[®], an adaptive hyperthermia planning software. The software is currently in the MDR certification process and is expected to be approved in the first quarter of 2026.



PROF. DR. MED.
PIRUS GHADJAR



MONICA
SENNEWALD

For this newsletter, Monica Sennewald (Vice President Marketing) speaks with **Prof. Dr. Pirus Ghadjar** (Head of Charité Hyperthermia Center), who provides clinical perspectives and discusses the importance of structured planning processes. In the following interview, he talks about the collaboration, the current status, and expectations for the certified version of HyperPlan[®].

MONICA SENNEWALD: “Which aspects of this collaboration are particularly valuable for you as a clinical user?”

PROF. DR. PIRUS GHADJAR: The collaboration builds on extensive shared experience with the clinical use of regional hyperthermia and combines the technical expertise of Dr. Sennewald Medizintechnik with the medical requirements of patient care. For us as clinical users, it is especially valuable that we are directly involved in the development process and can immediately contribute requirements arising from daily clinical practice.

A major advancement is that HyperPlan[®] now enables the three-dimensional visualization of power deposition in the tumor and surrounding tissues. This provides, for the first time, meaningful insight into where the energy actually reaches within the body – and whether hotspots could form in healthy tissue. This improves not only the planning of individual treatments but also traceability and standardization in everyday therapy.

MONICA SENNEWALD: “How important is software-based planning for the future of hyperthermia, and

what are your expectations for the certified version of HyperPlan®?”

PROF. DR. PIRUS GHADJAR: “Software-based planning is becoming increasingly indispensable for quality assurance in regional hyperthermia. Hyperthermia has a narrow therapeutic window – we aim to achieve the highest possible temperatures within the tumor while protecting healthy tissue. Valid and reliable treatment planning helps make the energy distribution visible and detect potential hotspots at an early stage. With a future certified version of HyperPlan®, I expect:

- greater treatment safety, as planning can be used as a regular quality assurance tool,
- individualized therapy decisions based on the anatomical conditions of each patient,
- higher treatment quality, especially for centers newly implementing hyperthermia,
- better comparability and standardization in multicenter studies.

In the long term, planning can help make hyperthermia more evidence-based and patient-specific.”

MONICA SENNEWALD: “What role does MDR certification play for safety, transparency, and acceptance?”

PROF. DR. PIRUS GHADJAR: “MDR certification is a fundamental prerequisite for using the software routinely in clinical practice. It provides:

- safety, because processes, validation, and risk management follow regulatory standards,
- transparency, as functionality and performance are evaluated independently,
- acceptance, particularly in clinics newly introducing hyperthermia, but also among payers and research partners.

Certification therefore makes an important contribution to the broader clinical integration of hyperthermia planning.”

“GENERATE PATIENT MODELS DIRECTLY FROM EXISTING CT DATASETS”

MONICA SENNEWALD: “Which elements do you consider particularly relevant for long-term clinical practice?”

PROF. DR. PIRUS GHADJAR: “Particularly relevant is the ability to generate patient models directly from existing CT datasets – including the contours of tumors and organs at risk already created for radiotherapy. This enables:

- a significantly more efficient planning workflow,
- individualized assessment of energy distribution in each patient,
- a realistic estimation of the expected temperature distribution and potential hotspots,
- standardized quality assessment prior to therapy.

This turns HyperPlan® into a tool that meaningfully integrates planning, documentation, and quality control in hyperthermia.”

MONICA SENNEWALD: “How does interdisciplinary collaboration influence further development – and which synergies have been most formative?”

PROF. DR. PIRUS GHADJAR: “Hyperthermia is inherently an interdisciplinary procedure: physicians, medical physicists, and developers each contribute different yet complementary perspectives. For software development, this collaboration is a major advantage:

- Clinical teams contribute requirements from daily practice and define which functions provide real benefit for patients.
- Physical expertise ensures that modeling is realistic, valid, and reproducible.
- Software development ensures that technical solutions become practical, safe, and accessible.

This close integration was crucial in evolving HyperPlan® from a research tool into a solution that meets the demands of clinical routine. Particularly formative was the joint validation using experimental and clinical data – a process in which technical realism and clinical relevance sharpened one another.”

MONICA SENNEWALD: “Thank you for your time and for sharing your expertise with us.”