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Hitachi opens First Europe based Proton Therapy system in Spain

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Hitachi, Ltd. on 8 May 2020 announced that it has provided its advanced proton therapy system to Clinica Universidad de Navarra (Madrid, Spain) and the treatment started on April 17, 2020. Clinica Universidad de Navarra is the first hospital which Hitachi has delivered the whole proton therapy system in Europe.

The proton therapy system installed at Clinica Universidad de Navarra is equipped with state-of-the-art technology including spot scanning technology that sends a therapeutic proton beam precisely conforming to the shape of the target tumor. And it has a 360degree rotating gantry treatment room with cone beam CT(1) and Real-time image Gated Proton Therapy (RGPT)(2) capability. Furthermore, this system has the option to add an additional gantry treatment room in the future. It becomes a part of the Cancer Center of Universidad de Navarra which treats more than 8,600 new cancer patients a year and the Clinica's first intrahospital facility.

Clinica Universidad de Navarra, based in Navarra and Madrid, Spain, is a world-class private hospital focusing on medical research, education and clinical care. As an only Spanish private hospital awarded as one of top 50 world hospitals in U.S. Newsweek magazine rankings in 2020(3), Clinica Universidad de Navarra has doctors and more than 2,800 clinical professionals dedicated to ensure personalized high-quality patient care.

Hitachi has been proactively promoting particle therapy system business worldwide, supplying world-class facilities with its highly reliable and proven particle therapy systems, which have treated more than 60,000 patients. Hitachi provides system and services, including single room solution in realizing installation in urban limited areas and hybrid system combined with capability of generating both proton and heavy-ion in one accelerator, to meet all customer needs.

Hitachi will continue to accelerate the globalization of its particle therapy system business and contribute to cancer treatment around the world and the improvement of social values.

(1) Cone beam CT provides three-dimensional anatomical images of patients, at isocenter immediately prior to being treated. Information on the location of bone is obtained from traditional orthogonal x-rays and the motion of tumors is captured by RGPT. These are then combined with the ability to identify healthy tissue surrounding a tumor, particularly the location and shape of soft tissue via Cone beam CT.
(2) RGPT allows real-time beam irradiation to the tumor while compensating for movement associated with respiration. It is the technology collaboratively developed between Hokkaido University and Hitachi, supported by Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST) of Japan Society for the Promotion of Science.
(3) U.S. Newsweek magazine releases the World Best Hospitals rankings every year.

Particle Therapy is an advanced type of cancer radiotherapy. Protons extracted from hydrogen atoms, or carbon ions are accelerated up to 70% of the speed of light. This energy is concentrated directly on the tumor while minimizing radiation dose to surrounding healthy tissue. Particle therapy improves the quality of life for cancer patients since the patient experiences no pain during treatment and the procedure has very few side effects compared to that of traditional radiotherapy. In most cases, patients can continue with their normal daily activities while undergoing treatment.