



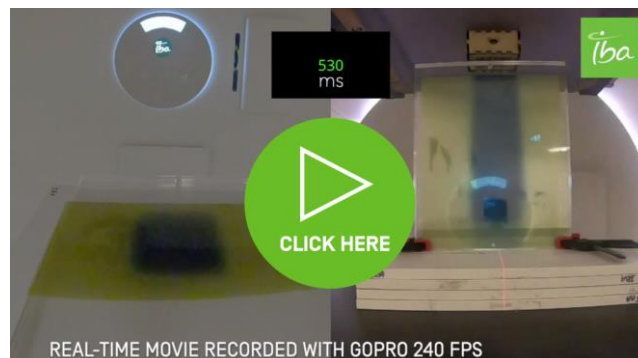
Flash Irradiation Delivered in a Clinical Treatment Room

Successful Flash Irradiation at Isocenter in IBA's Proteus® Solution Gantry Room

Louvain-la-Neuve, Belgium, 8 March 2019 – IBA (Ion Beam Applications SA), the world's leading provider of proton therapy solutions, is pleased to announce the first Flash irradiation in an IBA gantry treatment room at the University Medical Centre Groningen (UMCG) in The Netherlands. This achievement represents a major milestone in the work that IBA and its medical and research partners are engaged to bring Flash irradiation to clinical treatment.

This novel technique has the potential to dramatically change the landscape of radiotherapy and patient cancer care by enhancing the therapeutic window with a fast and powerful treatment that delivers a high dose of radiation at an ultra-high dose rate. Interest and enthusiasm around the potential clinical benefits of Flash therapy were confirmed at the recent IBA User Meeting where leading cancer research centers presented the latest findings of their biological research using IBA's research solution.

On March 1, 2019, IBA delivered several Flash irradiations at isocenter in one of the two gantry treatment rooms at UMCG in Groningen, The Netherlands. Results obtained with the current IBA Proteus® solution are very promising and largely exceed the conditions required to obtain the Flash effect with a dose rate up to 200 Gy/sec. A video showing the outcome of the irradiations is available below:



This video clearly demonstrates the capability of IBA's Proteus® platform and the tremendous potential of IBA's Flash therapy research program conducted in close collaboration with research centers around the world.

Olivier Legrain, Chief Executive Officer, IBA: "We are excited about the recent results obtained in Groningen, demonstrating IBA's technology leadership in Flash therapy research, a novel technique that has the potential to change the way patients are treated. Building on a unique and open culture of collaborative innovation, IBA continues its commitment to further develop Flash



therapy by partnering with the largest and most experienced user community in studying the radiobiology of proton Flash irradiation and help our clinical partners move faster to bring value to the clinic.”

Hans Langendijk, M.D., Ph.D., Chair of Radiation Oncology, University Medical Centre Groningen: “Being the first proton therapy center that has treated patients in The Netherlands, we have the vision that the clinical introduction of new and emerging radiation technologies should be more evidence-based. As the pioneer of the model-based approach for selecting patients for proton therapy in The Netherlands, we look forward to better understand the radiobiological effect of Flash irradiation and predict the benefits and outcomes of Flash Therapy for patients.

About Flash Therapy

Flash radiotherapy is a novel external non-invasive radiotherapy technique that consists of delivering a high dose of radiation at an ultra-high dose rate. When compared to radiotherapy delivered at conventional dose rates (1 – 7 cGy/sec), the Flash phenomenon seems to appear when irradiation is delivered with a dose superior to 8 Gy and at a dose rate above 33 Gy/sec in a very short time (less than a second). Researchers theorize that irradiation at very high dose rate causes oxygen depletion in tissues which renders healthy tissue radioresistant, enabling dose escalation to levels that destroy tumor tissues even in high hypoxia. In other words, healthy tissue seems to withstand this novel method of irradiation better, while the tumor has the same level of sensitivity to Flash irradiation as to conventional treatment.

More information can be found at <https://www.ncbi.nlm.nih.gov/pubmed/25031268>

About IBA

IBA (Ion Beam Applications S.A.) is a global medical technology company focused on bringing integrated and innovative solutions for the diagnosis and treatment of cancer. The company is the worldwide technology leader in the field of proton therapy, considered to be the most advanced form of radiation therapy available today. IBA’s proton therapy solutions are flexible and adaptable, allowing customers to choose from universal full-scale proton therapy centers as well as compact, single room solutions. In addition, IBA has a radiation dosimetry business and develops particle accelerators for the medical world and industry. Headquartered in Belgium and employing about 1,500 people worldwide, IBA has the largest number of installed proton therapy systems across the world.

IBA is listed on the pan-European stock exchange NYSE EURONEXT (IBA: Reuters IBAB.BR and Bloomberg IBAB.BB).

More information can be found at www.iba-worldwide.com



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