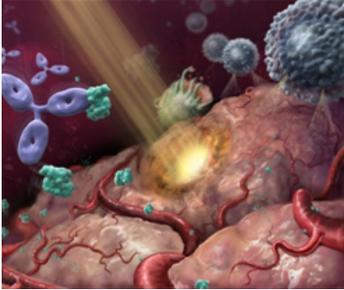


Focused Ultrasound *and Cancer Immunotherapy*

Overview



The field of cancer immunotherapy is progressing rapidly and focused ultrasound has demonstrated the potential to augment existing drug therapies. Currently, among the most promising immunotherapy agents are checkpoint inhibitors that “take the brakes off” the immune response and enable a stronger immune attack against cancer. Despite their demonstrated benefits of tumor regression and increased overall survival, these therapies are effective in only 20-40% of patients. Efficacy may be improved for patients with a baseline immune response prior to treatment, potentially elicited by radiation or other ablative therapies, such as focused ultrasound.

Ablative therapies – radiation, radiofrequency or laser thermal ablation, cryoablation, and focused ultrasound – have demonstrated the ability to stimulate an immune response in preclinical and clinical studies. In addition, therapies such as radiation have demonstrated success when used in combination with immunotherapy drugs, by providing the initial immune response that immunotherapy can then enhance. Given its noninvasiveness, use of non-ionizing radiation, and ability for conformal and precise ablation with no dose limitations, focused ultrasound is more appealing for this combination therapy than other ablative modalities.

State of the Field

Promising preclinical studies have demonstrated that focused ultrasound can initiate a powerful anti-tumor immune response either alone or in combination with other immune-based therapies such as checkpoint inhibitors. Focused ultrasound can also be used to increase the delivery of drug therapies through better penetration into the target tumors.

The first clinical trial pairing focused ultrasound with an immunotherapy drug is also underway, investigating the combination approach in patients with metastatic breast cancer.

The Focused Ultrasound Foundation

The Focused Ultrasound Foundation currently has a portfolio of more than 20 preclinical laboratory studies and clinical trials to assess focused ultrasound for immune-based treatment of glioma, melanoma, breast cancer and pancreatic cancer.

The Foundation has also established key partnerships with leading organizations in the field of cancer immunotherapy to explore and assess the full potential of focused ultrasound, particularly in combination with other immune-based therapies, to treat a variety of cancers. These collaborative efforts will help to advance more streamlined and rigorous research that will accelerate progress toward clinical trials, while also enabling better standardization in the field and increased consistency of protocols.

The Foundation is raising \$5 million over the next two years (through 2020), to support the growing number of research trials that are critical to advancing this field.

Focused Ultrasound Foundation

For more information, visit www.fusfoundation.org

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