Carthera: positive results from phase I/II clinical trial of SonoCloud-9 in treatment of glioblastoma published in Nature Communications

Results demonstrate safety and potential efficacy of SonoCloud-9 in treating recurrent glioblastoma

Phase III registrational trial underway - evaluating overall survival of patients undergoing carboplatin chemotherapy while treated with SonoCloud-9 system

Paris, France, March 4, 2024 – Carthera, a spin-off from Sorbonne University founded by Pr. Alexandre Carpentier, and developer of SonoCloud®, an innovative ultrasound-based medical device to treat a wide range of brain disorders, today announces the publication in *Nature Communications* of results from its phase I/II clinical trial in patients with recurrent glioblastoma (rGBM) of the SonoCloud-9 device in combination with carboplatin.

The article, titled: 'Repeated blood-brain barrier opening with a nine-emitter implantable ultrasound device in combination with recurrent glioblastoma: a phase I/II clinical trial,' assessed the safety and efficacy of blood-brain barrier (BBB) disruption with the SonoCloud-9 system in 33 rGBM patients receiving carboplatin. After surgery, activation to disrupt the BBB was performed every four weeks either before or after carboplatin infusion. The trial was a multinational investigation that took place across six clinical sites, four in France and two in the United States.

The results demonstrated the safety profile of the SonoCloud-9 in opening the BBB for the delivery of drug therapies. In 12 patients who received carboplatin just prior to sonication, the one-year overall survival rate was 58% and median overall survival was 14 months from surgery. With the historical rate of survival of 9-11 months in this patient population, these results suggest that the administration of drugs prior to sonication with the SonoCloud-9 system may lead to better clinical outcomes in patients.

This data builds on Carthera's robust clinical evidence from a phase I trial carried out by Northwestern University into the use of the SonoCloud-9 system for the treatment of rGBM patients with paclitaxel; published in Lancet Oncology in 2023.

"The publication of our clinical results in the highly respected Nature Communications journal demonstrates the significance of the SonoCloud technology as a viable new treatment option for patients with recurrent glioblastoma," said Professor Alexandre Carpentier, head of the neurosurgery department at AP-HP Sorbonne University, inventor of the SonoCloud and founder of Carthera.

"We are grateful for the support of the incredible clinical teams and their patients in the USA and France, who were instrumental in the success of this trial. These results further affirm Carthera's position as a world-leader in the field of therapeutic ultrasound for the treatment of brain diseases," said Michael Canney, chief scientific officer at Carthera. "With the SONOBIRD pivotal trial underway, we are one step closer to bringing glioblastoma patients new treatment options."

SONOBIRD is a randomized phase III trial aimed at validating the results observed in this Phase II trial. It will compare the approach of treating glioblastoma patients with the

SonoCloud-9 in combination with carboplatin after surgical resection to patients receiving the current standard of care treatments (temozolomode or lomustine).

About SonoCloud-9
The SonoCloud-9 device is implanted in a skull window, below the skin; once in place it is invisible. When activated for a few minutes, using a transdermal needle connection to an external control unit, the BBB is disrupted for several hours; a window during which drug therapies can be administered. When the BBB is disrupted, drugs can reach the brain in higher and more effective concentrations. This treatment can be repeated at each cycle of drug therapy.

The safety of the investigational use of SonoCloud-9 has not yet been determined, the device has not yet received EMA or FDA approval.

About Carthera
Carthera is a clinical-stage medtech company focused on developing innovative ultrasound-based medical devices to treat a wide range of brain disorders.
The company is a spin-off from AP-HP Paris and Sorbonne University. Carthera leverages the inventions of Pr. Alexandre Carpentier, head neurosurgeon at AP-HP Sorbonne university, who has achieved worldwide recognition for his innovative developments in treating brain disorders. Carthera is developing SonoCloud®, an intracranial implant that temporarily opens the Blood-Brain Barrier (BBB). The device is currently in clinical trials in Europe and the United States. It received FDA Breakthrough Device Designation in 2022.
Founded in 2010 by Pr. Alexandre Carpentier, run by CEO Frederic Sottilini and chaired by Oern Stuge MD, Carthera has offices in France (Lyon and Paris) and a subsidiary in Boston, Massachusetts, USA. Since its inception, the technical and clinical development of SonoCloud has received support from the National Research Agency (ANR), the French public investment bank (Bpifrance), the National Institutes of Health (NIH) and the European Innovation Council (EIC).
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