



Biovision Investor Conference 13-14 APRIL 2016



BIOVISION The World Life Sciences Forum



One line pitch:

CarThera improves the prognosis of patients with brain tumours through the development of innovative therapeutic ultrasound-based Medical Devices



Market Analysis:

The prognosis for patients with brain tumors is very low. The management of these tumors is currently based on surgical resection when possible, followed by systemic chemotherapy. Unfortunately, this approach does not significantly improve patient survival due to the presence of the blood-brain barrier (BBB). The BBB limits the exchange of chemotherapeutic agents from the blood to the tissue, considerably reducing their efficacy in the brain. More than 130,000 patients per year (EU & USA only) could benefit from a system capable of transiently opening the BBB, thus allowing for better drug efficacy.

Business Proposition:

CarThera has developed a minimally invasive and easy to use device: the SonoCloud® implant. At the end of a tumor resection procedure, just before the closure of the skin, the neurosurgeon fixes the SonoCloud in the skull bone thickness without disrupting standard management pathway of the patient. When activated, the SonoCloud emits ultrasound energy for a duration of two minutes to reversibly disrupt (6 hours) the BBB. For cancer treatments, the process is repeated by a nurse before each chemotherapy session, thus enhancing intracerebral penetration (up to a 700% increase) of oncology drugs without increasing dose or subsequent toxicity.

Competitive Advantage:

SonoCloud is the only technique able to repeatedly and safely open the BBB at each chemotherapy course. It requires no carotid or intracerebral penetration and has shown to have very limited risk of toxicity compared to the various techniques of intracerebral drug delivery (clinical techniques and technology under R&D). It enables targeting of large areas even in the periphery of the brain (HIFU cannot). The total time that the drug can penetrate the brain and the number of treatments that can be performed limit all other techniques but the SonoCloud. Thus, it should become the most effective and widely adopted clinical technique.

Investment Attractiveness:

A clinical phase 1/2a study was initiated in 2014 to evaluate the safety and the maximum tolerated dose. End of 2015, 15 patients were implanted and treated with 40 courses of chemotherapy coupled with ultrasound. The ultrasound dose threshold for a safe opening of the BBB was determined (first in man) and cerebral bioavailability of chemotherapy substantially increased. The therapeutic effect of a better penetration of the chemotherapy into the tumor will be evaluated with an upcoming pivotal trial in EU and in the USA where CarThera is aiming at an accelerated procedure by the FDA; and potentially an accelerated exit for investors.

IP Situation:

Pr. Alexandre Carpentier patented the concept for the SonoCloud in 2010. After a year of research on the subject, it was further improved and the PCT was updated. Following these contributions and enhancements, CarThera became co-owner of the patent along with UPMC and APHP. CarThera concluded with other owners an agreement in October 2012 giving the company exclusivity in the field of treatment of brain disorders, tumors, modulation of cell physiology, and release of therapeutic agents. Since then, CarThera has filled 2 other families of patents on the SonoCloud.

COMPANY PROFILE

- **Website:**
www.carthera.eu
- **Activity:** MedTech
- **Contact:**
SOTTILINI Frederic
frederic.sottilini@carthera.eu
- **Location:**
ICM iPEPS 47-83 bd de l'Hôpital
75013
France
- **Founded in:** 08/02/2010
- **Employees:**
- **Management:**
SOTTILINI Frederic
CEO
COSTANTINI Dominique
Chairman
LACOSTE Francois
CTO
CARPENTIER Alexandre
CSO
- **Financial information (€):**
 - **Company stage:**
Clinical Development Stage
 - **Capital raised to date:**
 - **Monthly burn rate:**
 - **Capital seeking and date:**
- **Investors:**
- **Referred by:**
Dominique Costantini