2-THE-TOP Phase 2 Trial Reports Positive Top-Line Results in Newly Diagnosed Glioblastoma

November 16, 2021

Median progression-free survival was at least 11.2 months in patients with greater than 9 months of follow-up

Partial or complete response was detected in 24% of patients

ST. HELIER, Jersey–(BUSINESS WIRE)–Novocure (NASDAQ: NVCR) today announced that Dr. David Tran, Chief of the Division of Neuro-Oncology at the McKnight Brain Institute at the University of Florida, has released updated data from the phase 2 pilot 2-THE-TOP trial testing the safety and efficacy of Tumor Treating Fields (TTFields) together with pembrolizumab and temozolomide for the treatment of adult patients with newly diagnosed glioblastoma (GBM). In patients with greater than 9 months of follow-up, median progression-free survival, the primary endpoint, was at least 11.2 months. 24% of patients achieved partial to complete response. Dr. Tran will present these data at the Society for Neuro-Oncology (SNO) 2021 Annual Meeting in Boston on November 19, 2021.

“These data show that Tumor Treating Fields have the potential to activate the pathways needed to create an effective, anti-cancer environment in the tumor,” said Dr. Ely Benaim, Novocure’s Chief Medical Officer. “The results published today suggest a potential paradigm shift in how we approach treatment of patients with newly diagnosed glioblastoma.”

“We are very encouraged by the results of the 2-THE-TOP study, especially in light of the poor prognostic factors of the patient population,” said William Doyle, Novocure’s Executive Chairman. “Dr. Tran’s research is an important continuation of our exploration of synergies between TTFields and immunotherapy agents. We would like to thank Dr. Tran and the patients enrolled in the 2-THE-TOP trial for their ingenuity and courage.”

Twenty-five patients with a median age of 61 years were enrolled in the 2-THE-TOP study, with a median follow-up of 14.7 months. Eight (32%) had biopsy only and partial resection, respectively. Eighteen (72%) had unmethylated MGMT and 3 (12%) had an IDH mutation. Twelve (48%) were progression-free, and 15 (60%) were still alive. Of the 19 patients with follow-up greater than 9 months, the median progression-free survival was at least 11.2 months compared to 6.7 months from the historical control study, EF-14, in which patients received TTFields and adjuvant temozolomide. Six (24%) patients with measurable tumors achieved partial or complete response. 193,760 peripheral blood mononuclear cells were sequenced in 12 patients before pembrolizumab and detected robust post-TTFields T cell activation in 11 of 12 patients via the T1IFN trajectory with a strong correlation with the TCRαβ clonal expansion Simpson index (Spearman coefficient r=-0.8, *P*=0.014). The study defined a T cell-based gene signature of TTFields effects on TCRαβ clonal expansion. The most common adverse events were thrombosis (4 patients, 16%), seizure (3 patients, 12%), and metabolic disturbances (2 patients, 8%).

The 2-THE-TOP trial is a phase 2 pilot trial designed for the treatment of patients with newly diagnosed GBM. Patients enrolled in the trial underwent maximal tumor resection followed by standard chemoradiation. Following the completion of chemoradiation, patients began a course of monthly cycles of adjuvant temozolomide. Treatment with TTFields started at approximately the same time as the first cycle of adjuvant temozolomide. Pembrolizumab was introduced in the second cycle of treatment and subsequent cycles of pembrolizumab were administered every three weeks until first disease progression or unacceptable toxicities or 2 years, whichever comes first.

About EF-14

The EF-14 trial was a randomized, phase 3 pivotal trial which compared, post radiation, TTFields plus temozolomide versus temozolomide alone for the treatment of newly diagnosed GBM. Median progression-free survival, the primary endpoint, was 6.7 months for TTFields plus temozolomide versus 4.0 months for temozolomide alone. Median overall survival was 20.9 months for TTFields plus temozolomide versus 16.0 months for temozolomide alone.

About Tumor Treating Fields

Tumor Treating Fields, or TTFields, are electric fields that disrupt cancer cell division. Fundamental scientific research extends across more than two decades and, in all preclinical research to date, TTFields have demonstrated a consistent anti-mitotic effect. TTFields therapy is intended principally for use together with other standard-of-care cancer treatments. There is a growing body of evidence that supports TTFields’ broad applicability with certain other cancer therapies, including radiation therapy, certain chemotherapies and certain immunotherapies. In clinical research and commercial experience to date, TTFields therapy has exhibited no systemic toxicity, with mild to moderate skin irritation being the most common side effect. The TTFields global development program includes a network of preclinical collaborators and a broad range of clinical trials across all phases, including four phase 3 pivotal trials in a variety of tumor types. To date, more than 20,000 patients have been treated with TTFields therapy.

About Novocure

Novocure is a global oncology company working to extend survival in some of the most aggressive forms of cancer through the development and commercialization of its innovative therapy, Tumor Treating Fields. Novocure’s commercialized products are approved in certain countries for the treatment of adult patients with glioblastoma and in the U.S. for the treatment of adult patients with malignant pleural mesothelioma. Novocure has ongoing or completed clinical trials investigating Tumor Treating Fields in brain metastases, gastric cancer, glioblastoma, liver cancer, non-small cell lung cancer, pancreatic cancer and ovarian cancer.

Headquartered in Jersey, and with a growing global footprint, Novocure has regional operating centers in Root, Switzerland, Portsmouth, New

Hampshire and Tokyo, as well as a research center in Haifa, Israel. For additional information about the company, please visit Novocure.com and follow @Novocure on LinkedIn and Twitter.

Forward-Looking Statements

In addition to historical facts or statements of current condition, this press release may contain forward-looking statements. Forward-looking statements provide Novocure's current expectations or forecasts of future events. These may include statements regarding anticipated scientific progress on its research programs, clinical trial progress, development of potential products, interpretation of clinical results, prospects for regulatory approval, manufacturing development and capabilities, market prospects for its products, coverage, collections from third-party payers and other statements regarding matters that are not historical facts. You may identify some of these forward-looking statements by the use of words in the statements such as "anticipate," "estimate," "expect," "project," "intend," "plan," "believe" or other words and terms of similar meaning. Novocure's performance and financial results could differ materially from those reflected in these forward-looking statements due to general financial, economic, environmental, regulatory and political conditions as well as issues arising from the COVID-19 pandemic and other more specific risks and uncertainties facing Novocure such as those set forth in its Annual Report on Form 10-K filed on February 25, 2021 with the U.S. Securities and Exchange Commission. Given these risks and uncertainties, any or all of these forward-looking statements may prove to be incorrect. Therefore, you should not rely on any such factors or forward-looking statements. Furthermore, Novocure does not intend to update publicly any forward-looking statement, except as required by law. Any forward-looking statements herein speak only as of the date hereof. The Private Securities Litigation Reform Act of 1995 permits this discussion.

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