

CAR T Cell Therapy – Autologous Cancer Therapeutic Combating Toxicity

CAR-T Cell Therapy Market – A Revolution in Cancer Treatment



Seattle, Mar 14, 2019 (IssueWire.com) - Cancer immunotherapy aims to eradicate tumours without the toxicity associated with conventional cancer treatments. Tumours suppress immunity by evading host immune-response. Strengthening immunity is the most appropriate treatment to thwart nasty cancerous tumours. Immunotherapy focuses on strengthening the body's natural immune system to fight cancer. In CAR T Cell therapy, T lymphocytes (T cells) are collected through blood samples and genetically engineered in laboratories to produce Chimeric Antigen Receptor (CAR) on their surface. CAR are proteins that allow T cells to recognise an antigen on target tumour cells. After millions of CAR T-cells are generated, they are again infused into the patient's body, which then acts as attacker cells to accurately detect and kill cancer cells. As they continue to remain in the body, they prevent cancer-reoccurrence, thus providing a long-term solution from the malady.

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The first clinical trials of CAR T cells began in 1996 on patients suffering from ovarian cancer and the results showed limited efficacy. However, over the last two decades, significant advancements in molecular biology and immunology have shown significant success in clinical trials and in overcoming challenges.

Car T cell therapy researches have been fairly successful in Acute Lymphoblastic Leukaemia (ALL), multiple myeloma, neuroblastoma, pancreatic cancer, breast cancer and other blood-related cancers especially in children. As per statistics released by the Leukemia and Lymphoma Society in 2016, a blood cancer patient is diagnosed roughly every 3 minutes. Moreover, 10.2% of diagnosed cancer cases in the U.S. suffer from either leukaemia, lymphoma, or myeloma. Increasing incidence of cancer in the U.S. and Europe and rising expectation for a reliable smooth treatment will generate a lucrative revenue for CARTs market. Advanced research techniques, strong economy, robust infrastructure further enhance the potential of these countries as pockets of massive growth in the near future. The Asia Pacific, spearheaded by the advanced technological research infrastructure in Japan is expected to position the region as a lucrative market post-commercialization of the product. However, the low prevalence of cancer and the high cost of the therapy are setbacks for market growth in these regions.

Prominent companies pioneering in commercializing CAR T cell therapy are Novartis International AG, Juno Therapeutics, Kite Pharma Inc, Bellicum Pharmaceuticals Inc, Colgene Corporation and many more.

Product launches in pipeline expected to boost the market

Currently, CAR T cells therapy is available only to patients on the clinical trial, though with clinical evaluation growing exponentially two companies Novartis International AG and Kite Pharma Inc are in plans to register their respective products, CTL019(anti-CD19) targeting lymphoblastic leukaemia in paediatrics and Kte-C19(anti-CD19) with B-cell lymphoma, in 2017. Juno Therapeutics hit a roadblock in launching JCAR015, a product targeting adult patients due to the death of five patients under clinical trial due to therapy-induced cerebral oedema. Recently, Novartis shut its cell and gene therapy unit, apparently an unexpected move.

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Side effects restraining growth

Major side effects encountered are cytokine-release syndrome: excess cytokine-release after T-cell activation, causes delirium, low blood pressure and poor lung oxygenation; B-cell aplasia where normal B-cells are destroyed by antigens though long-term effects have not been found; Tumor lysis syndrome, a metabolic complication arising due to breakdown of dying cells but can be controlled by supportive therapy. Potential solutions such as the introduction of suicide-gene T-cells causing the death of the engineered T-cells after the required period help negate side effects. Manufacturing-infrastructure, personalized- approach of the therapy, side-effect handling: all these factors attach an exorbitant price tag to this treatment. **Affordability, a big limitation but longevity of the treatment and broader applicability to all age-groups are significant add-ons.**

To know more about the latest market trends and insights, read the report titled “**Global CAR T Cell Therapy Market, By Targeted Antigen(CD 19,CD 20, GD2, CD22, CD30, CD33, HER1, HER2, Meso, EGFRvIII), Therapeutic Application(Acute Lymphocytic, Leukemia, Chronic Lymphocytic Leukemia, Non Hodgkin Leukemia, Multiple Myeloma, Pancreatic Cancer, Neuroblastoma, Breast Cancer, Acute Myeloid Leukemia, Hepatocellular Carcinoma, Colorectal Cancer), and Geography – Trends, Analysis and Forecast till 2028**”, published by Coherent Market Insights. Click on the link below to access the report –

<https://www.coherentmarketinsights.com/market-insight/car-t-cell-therapy-market-102>

Despite these restraints, CAR T cell therapy is a promising option for relapsed patients after intensive chemotherapy and stem cell transplant. The depleted **immune system is a drastic problem raising mortality in cancer patients hence immunity-boosting CARTs is a boon** to patients as a successful application of CAR T cell therapy on specifically targeted tumour cells would minimise toxicity risks. Once, initial hurdles are surpassed, this immunity-enhancing autologous therapy is sure to make waves and rope in the menace of cancer lurking on mankind.

Also, Coherent Market Insights has a proprietary database of pipeline biologics and biosimilars, called **PHASE-XS**. This database provides analytical data in addition to the clinical information of ongoing trials for biologics and biosimilars. An amalgamation of more than 30 parameters, **PHASE-XS** helps biotechnology and pharmaceutical companies to analyze the market trend, competition, and market potential. For more information or to access this database, kindly click on the below link or contact at sales@coherentmarketinsights.com

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