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Thailand makes progress in CAR T-Cell Therapy Innovation

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New hope for Thai lymphoma cancer patients



Chulalongkorn University, Thailand, and Nagoya University, Japan, in their collaboration to develop an immunotherapy method for curing cancer, have reported on the progress of CAR T-cell immunotherapy innovation for treating cancer in leukaemia and B-cell lymphoma patients, which can increase survival rates and reduce cancer recurrence.

The Cell and Gene Therapy Manufacturing Centre is the first and only cell production facility in the King Chulalongkorn Memorial Hospital that has been certified by the Food and Drug Administration of Thailand. The centre has collaborated with Dr Supannikar Tawinwung from the Faculty of Pharmaceutical Sciences, Chulalongkorn University, an expert in T-cell genetic modification, as well as experts from the National Blood Center and Thai FDA to develop a quality system for cell production to meet the international standards in point-of-care cellular therapy manufacturing.

The use of viral vectors for genetic modification is one of the main reasons for the high cost of commercial CAR T-cells, as the production and quality control processes for viral vectors used in humans are very complex and expensive. The group in Thailand has collaborated with researchers from Nagoya University, who are experienced in nonviral genetic modification technology for CAR T-cell production, which has a lower production cost compared to viral vector-based methods.

In 2023, Nagoya University plans to start an investigator-initiated clinical trial using CAR T-cells for relapsed/refractory malignant lymphoma, which will be used in clinical trials at Hokkaido University Hospital, National Cancer Center Hospital East, Nagoya University Hospital, Kyoto University Hospital, and Kyushu University Hospital.

Phase 1 clinical trial is underway to study the safety and preliminary efficacy of CAR-T-cell therapy in patients aged 18-60 with B-cell lymphoma who do not respond to standard treatment. The team aims to offer not-for-profit CAR T-cell therapy services produced using in-house cell manufacturing to increase treatment accessibility for Thai lymphoma patients.