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Singapore discovers non-invasive method to predict relapse of childhood cancers

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The new method is pain-free and less costly

The most common form of solid tumour affecting children is neuroblastoma. It is known to be the cause of a disproportionate number of childhood cancer deaths, and for relapsed patients, fatality rates are very high.

A team of scientists and doctors from the KK Women's and Children's Hospital (KKH), Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine) and the Institute for Health Innovation and Technology, has discovered a novel, non-invasive method to predict and reduce the relapse of childhood cancers.

Cancer relapse is usually caused by a small number of 'leftover' cancer cells that remain circulating in the blood long after treatment. These cells can eventually settle in various parts of the body and give rise to multiple tumours, years later.

The bone marrow is the site where the majority of neuroblastoma relapses occur. However, the current method of sampling bone marrow can be complex, painful and costly.

The new, non-invasive method to monitor neuroblastoma involves only a small amount of blood from the patient, and is pain-free and less costly. The blood sample is processed to separate cancer cells from other cells. The study identified several genes that predicted relapse in a group of neuroblastoma patients. These include OLFML2B, STAT1, ARHGDIB, STAB1 and TLR2 – genes known to be associated with a more aggressive disease state in neuroblastoma.

The team hopes that the new method of predicting and reducing the relapse of childhood cancers can soon be put to clinical practice in the near future.