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ALL 2010 Study





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HOPE FOR HIGH-RISK LEUKAEMIA PATIENTS

The Ma-Spore ALL 2010 Study

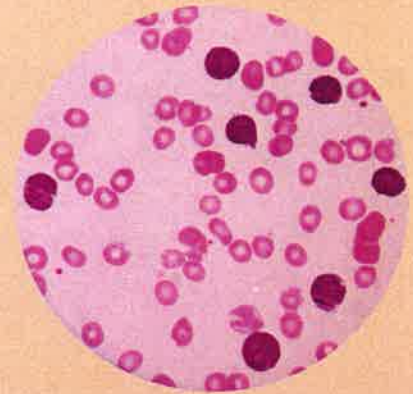
With intensified chemotherapy treatment, children with high-risk leukaemia have a higher cure rate and a lower relapse rate.

Acute lymphoblastic leukemia (ALL) is the most common form of childhood cancer and in Singapore it affects three out of every 10 children who are diagnosed annually. It is a type of blood cancer which occurs when an abnormal bone marrow cell continues to grow and produce uncontrollably. In Singapore, the current cure rates for children with ALL stands at 88 per cent, while the worldwide figure ranges from 50 to 85 per cent.

ALL and the Ikaros gene

The Ikaros gene allows normal cells to mature into functional cells. About 20 per cent of children with ALL lose the Ikaros gene in their leukaemia cells, which do not mature. This development is called the Ikaros deletion and results in leukaemia cells that are stuck in an immature and constantly growing state.

The Ikaros deletion confers a significantly worse outcome for ALL patients. Specifically, children with Ikaros deletion had a 30 per cent chance of relapse compared to 13 per cent for those who did not have Ikaros deletion.



New treatment protocol with latest findings

In a joint eight-year study involving 346 patients across four hospitals, a team of researchers from Singapore and Malaysia has managed to raise cure rates for a subgroup of ALL patients with Ikaros deletion from 70 per cent to more than 91 per cent and reduced relapse rates from 30 per cent to 13 per cent.

Three leading doctors in the team, Associate Professor Allen Yeoh of the Department of Paediatrics at the National University of Singapore Yong Loo Lin School of Medicine, Associate Professor Tan Ah Moy of the KK Women's and Children's Hospital and Professor Hany Ariffin, head of the Paediatric Haematology-Oncology and Bone Marrow Transplantation Unit of the University of Malaya, studied the peculiarities of these children's leukaemia and developed a successful new treatment protocol. The study is the first in the world to show that intensifying therapy for Ikaros gene-deleted children with ALL reduces relapse and improves treatment outcome. It also explored critical treatment issues in cost-effective therapy important in Singapore and Malaysia, including that of Asian sensitivity to chemotherapy drugs. Their findings contribute important knowledge to the field and have made a significant impact on how doctors treat ALL in children.

The study, named the Malaysia-Singapore (Ma-Spore) ALL 2010 is a collaboration between four hospitals in Singapore and Malaysia – the National University Hospital, KK Women's and Children's Hospital, University of Malaya Medical Centre and Sime Darby Medical Centre in Subang Jaya. It was actually built on an earlier study in 2003 which revealed that reducing chemotherapy for paediatric ALL patients led to better outcomes. However, the team felt that better solutions were still needed for children with high-risk disease and this resulted in the findings of the current study.

"Ma-Spore success is possible because of our unique collaboration, bringing together the many leaders in childhood ALL therapy in Singapore and Malaysia to

focus on unique gaps, funded both by government and charity," said Associate Professor Yeoh who is also Head and Senior Consultant at the Division of Paediatric Haematology-Oncology at NCIS and the National University Hospital (NUH).

Beyond Ma-Spore ALL 2010

With the success of Ma-Spore ALL 2010, the team has embarked on the design of a new study, Ma-Spore ALL 2020. To optimise treatment outcomes, it will explore further treatment tailoring for children who are predicted to have poorer outcomes and use immunotherapy upfront as they are already at the limits of chemotherapy.

"The ultimate aim is a cure. With better tools to study leukaemia cells and better ways to treat high risk cases, we will be able to identify those who will relapse early, so that we can intervene and cure them." said Associate Professor Yeoh.



Associate Professor Allen Yeoh

Head & Senior Consultant
Division of Paediatric
Haematology-Oncology, NCIS

Associate Professor Allen Yeoh is the Head and Senior Consultant in the Division of Paediatric Haematology-Oncology of NCIS and NUH, as well as VIVA-Goh Foundation Associate Professor in Paediatric Oncology in the Yong Loo Lin School of Medicine, NUS. He was trained in NUS and NUH and was in the St Jude Children's Research Hospital as a Clinical Fellow from 1999 to 2001. His interest lies in childhood leukaemia and he is the first Singaporean doctor to receive the American Society of Haematology Merit Award for his pioneering work in gene expression profiling in leukaemia. Much of this work was funded by the VIVA, Goh, Lee and Children's Cancer Foundations, Tote Board and the National Medical Research Council. It was one of the highest cited article in this field in 2003.