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New research provides hope for childhood cancer sufferers

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Scientists investigating drug therapies for children with Acute Lymphoblastic Leukaemia (ALL) have presented new data demonstrating for the very first time that a small molecule called ABT-737 can increase the effectiveness of standard therapies.

Dr Richard Lock, Head of the Leukaemia Biology Program at the Children's Cancer Institute Australia for Medical Research, Sydney, along with collaborators from the Childrens Hospital Los Angeles and University of Southern California, USA, recently published their findings in the prestigious scientific journal Blood.

ALL is the most common form of childhood cancer. Over the years, improvements in primary therapy have increased the cure rate to approximately 80 percent. However, for the 20 percent of patients who relapse, the majority will die.

"When used in combination with common drugs administered in ALL therapy, ABT-737 has the ability to enhance the combined toxicity of these drugs against the leukaemia cells with minimal effects on the normal cells of the body," said Dr Lock.

Resistance to common therapeutic drugs is associated with poor long-term outcomes in leukaemia patients. In the study, the effects of ABT-737 in combination with three common chemotherapeutic agents: L-Asparaginase, vincristine and dexamethasone, were tested on a number of ALL cell lines under conditions which were considered

clinically relevant for the disease.

ABT-737, developed by Abbott Laboratories, acts by inhibiting the Bcl-2 family of proteins. These proteins are expressed in ALL and inhibit the mechanisms responsible for destroying leukaemia cells. High levels of expression of Bcl-2 is linked with chemoresistance in a variety of cancers.

“There is a critical need for new drugs with novel mechanisms of action that might improve the outcome for relapsed ALL patients,” said Dr Lock.

Source: Research Australia