

Researchers' blood cancer breakthrough

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Researchers at the University of Southampton have discovered clues to why many patients do not respond to a standard drug for the blood cancer lymphoma, raising hopes that more effective treatments can be designed.

Non-Hodgkin's [lymphoma](#) is the sixth most common cancer in the UK and causes around 4,500 deaths a year in the UK, with a rise in cases reported. The most successful advance in treatment in recent years has been a drug called rituximab, which works by 'tagging' the surface of the tumour [cells](#) so they can be sought out and destroyed by the patient's own immune system.

Unfortunately, an estimated 30% of patients do not respond to treatment. Professors Mark Cragg, Peter Johnson and Martin Glennie and their teams at the University Of Southampton Faculty Of Medicine are investigating reasons behind this.

They found that in some lymphoma patients, after binding to the surface of the cancer cells, rituximab is quickly internalised inside the cell. This means that the drug does not work as it should and immune cells cannot seek out and kill the cancer cells as effectively.

The results of the team's research, which was co-funded by the charity Leukaemia & Lymphoma Research, the Medical Research Council, [Cancer](#) Research UK and Tenovus, Cardiff are published online in the medical journal Blood.

Through a series of laboratory tests, the Southampton scientists crucially noticed that rituximab is internalised much faster by the lymphoma cells when a molecule called ‘FcγRIIb’ is also present at high levels. In a small, preliminary analysis, the researchers found that those patients with high amounts of this molecule on their lymphoma were less likely to be treated successfully. They are now moving forward with a much bigger analysis to confirm their findings.

Professor Cragg said: “The discovery that high levels of FcγRIIb on lymphoma cells can determine how effective rituximab will be could be very significant. It may be that different, non-internalising antibodies are needed for certain patients. FcγRIIb is also a potential target for new drugs to work alongside standard treatments.”

Dr. David Grant, Scientific Director at Leukaemia & Lymphoma Research, said: “Treatment for non-Hodgkin’s lymphoma has made rapid progress but clearly a significant number of patients do not respond to drugs like rituximab. Understanding exactly why they don’t respond is vital so that new drugs can be designed to make sure that every patient survives.”

Dr. Ian Lewis, Associate Director of Research at Tenovus, said “In addition to helping us devise new drugs and therapeutic strategies for the treatment of lymphoma, this discovery could also help us to identify those [patients](#) who will not respond to treatment with rituximab and therefore offer them alternative, more effective treatments at a much earlier stage”.

Provided by University of Southampton

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