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Cell find 'lifts leukemia fight'

Research which sheds light on how blood cancer cells work may improve the power of leukemia treatments.

A Stanford University study found that leukemia "stem cells", which drive the spread of the cancer, work differently than healthy blood stem cells.

This might mean they could be targeted and destroyed more easily.

The study, published in the journal *Cell Stem Cell*, might one day reduce the chances of leukemia returning after treatment, say experts.

Cancer was once regarded a disease in which all malignant cells were the same, but in recent years, cancer researchers have focused on the role of cancer "stem cells".

These, like healthy stem cells, provide a source for new cells, and it is important to kill these to stop the cancer regrouping and returning.

This is a problem in leukemia, in which there can be a significant risk of relapse even after apparently successful chemotherapy.

Conventional treatment for some forms of leukemia destroys both leukemia cells and healthy blood cells, but the latest research may point to ways in which therapies can be fine tuned to pick off the leukemia stem cells more efficiently.

The researchers found difference between two types of stem cells.

Leukemia stem cells, they found, tap into a genetic mechanism normally harnessed by stem cells in the embryo to allow their division into fresh cells.

Normal blood stem cells use a different mechanism to prompt their growth.

This means that, in theory at least, drugs which targeted this process would stop leukaemia stem cells dividing, while leaving healthy blood stem cells unharmed.

Root removal

Dr Tim Somervaille, who led the research, said: "This study highlights the great potential of treatment aimed at genes and pathways that are of great importance to the function of leukemia stem cells.

"These findings may have a substantial clinical impact."

A spokesman from charity Leukemia Research said, "The research could also help make future treatments better at completely wiping out leukemia stem cells".

He said: "We will only be able to cure leukemia if we can target and kill the leukemia stem cells, something that current chemotherapy may not be doing as we would like.

"If you killed 90% of the leukemia cells, but only 10% of these leukemia stem cells, you haven't done well enough.

"This approach is like ripping out the roots of the cancer as well as the growth above the surface."

He said he would expect any treatment arising from the research to be delivered in combination with other anti-cancer drugs.