MedicalXpress

A new treatment for acute myeloid leukemia could prove beneficial for even more people

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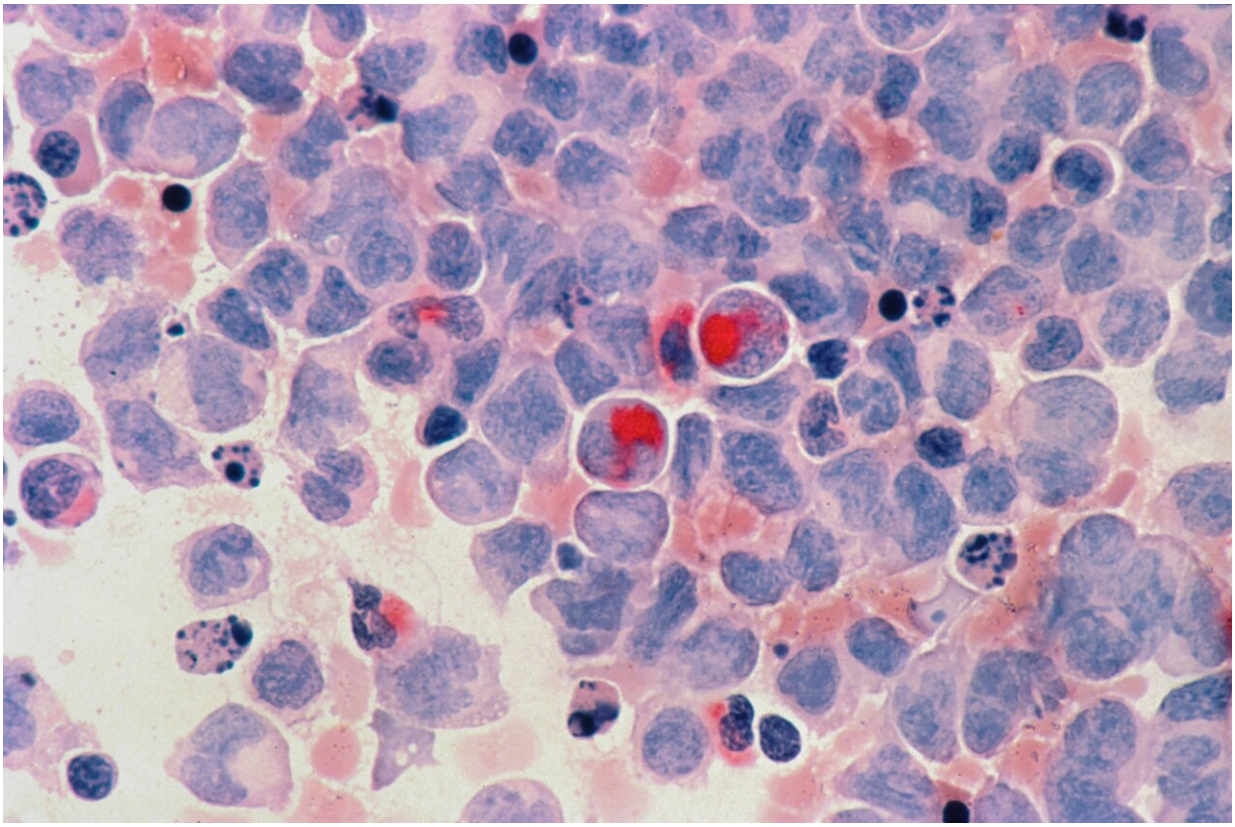

Acute myelocytic leukemia (AML). Credit: Unsplash/CC0 Public Domain

New research published in *Science Advances* today conducted by researchers at Peter MacCallum Cancer Center show a new treatment for two challenging blood cancers could potentially help more patients than

originally thought.

Associate Professor Nicholas Clemons, Group Leader in the Cancer Evolution and Metastasis Program at Peter Mac, said, "Our research highlighted an additional mode of action for the treatment known as eprenetapopt opening up its potential to work in a broader group of acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS) patients.

"The treatment was initially thought to only target patients with the TP53 mutation however we believe it could be beneficial to substantially more patients."

AML is a type of blood cancer known as leukemia. It is characterized by the bone marrow producing too many immature white blood cells. This stops the marrow from being able to make normal blood cells.

Fellow researcher Dr. Kenji Fujihara said "We believe this treatment will work well in AML patients that accumulate iron as we uncovered that eprenetapopt triggers a cell death called ferroptosis that is reliant on iron.

"This is an exciting development as cancer cells can become resistant to the usual means of cell death know as apoptosis."

Associate Professor Clemons said the treatment is currently undergoing clinical trials and the research discovery will hopefully enable more patients who need new treatment options a chance to beat their cancer.

"We're now also interested in finding out what other cancers outside of AML/MDS might benefit from this new activity of the drug," he said.

Myelodysplastic syndrome changes into acute myeloid leukemia in

approximately 30% of people and in Australia around 900 people are diagnosed with AML each year. Only 10% to 15% of AML patients carry the TP53 mutation so opening the treatment to a broader group is very beneficial.

Azacitadine is the only approved treatment available for MDS and AML and is successful in achieving a complete remission in 14% and 7% of patients respectively.

More information: Kenji M. Fujihara et al, Eprenetapopt triggers ferroptosis, inhibits NFS1 cysteine desulfurase, and synergizes with serine and glycine dietary restriction, *Science Advances* (2022). DOI: 10.1126/sciadv.abm9427

Provided by Peter MacCallum Cancer Centre